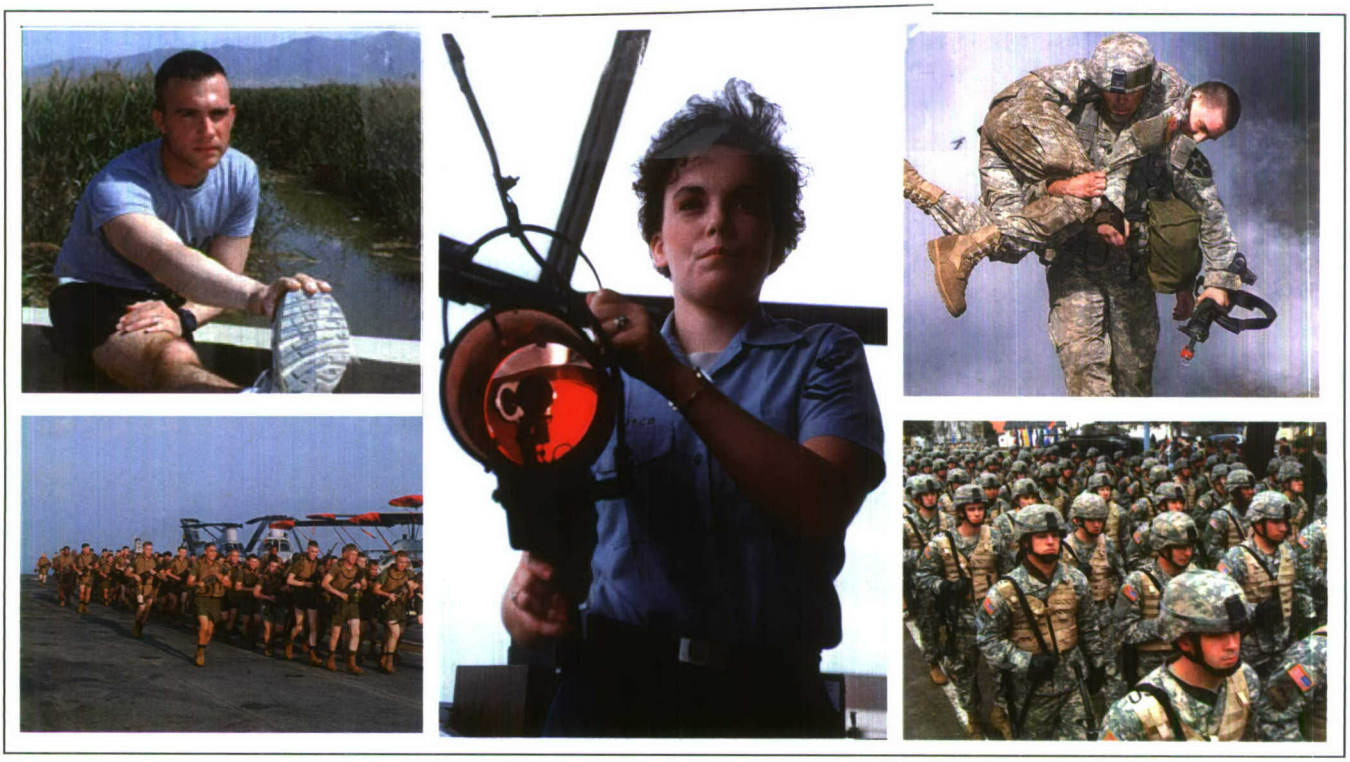
AMSARA

Accession Medical Standards Analysis & Research Activity



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For 2006 Accessions

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14. ABSTRACT

The Accession Medical Standards Analysis and Research Activity (AMSARA) has completed its eleventh year of providing the DoD with evidence-based evaluations of accession medical standards. The Annual Report presents descriptive statistics that AMSARA compiles annually and publishes for historical and reference value as well as special studies. Special studies presented in this AR include case series reviews on spinal curvature, shoulder instability, and internal knee derangement, a description of the Department of Defense Medical Evaluation Review Board applicant population from 2004-2005, a study on deployment and accession medical waivers, and a description of interservice separation codes utilized among servicemembers discharged for conditions existing prior to service. Descriptive statistics are for DoD enlisted accessions who enlisted in 2006.

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Executive Summary

The Accession Medical Standards Analysis and Research Activity (AMSARA) has completed its eleventh year of providing the Department of Defense with evidence-based evaluations of accession standards. AMSARA evaluates accession medical standards and retention programs to improve military readiness by maximizing both the accession and retention of motivated and capable recruits. This report provides findings from selected special studies and descriptive data on calendar year 2006 accessions. We anticipate that AMSARA will begin to report data on a fiscal year basis in the next Annual Report which is planned for release in the second quarter of FY 2009.

Section 1, Special Studies, presents brief overviews of the research conducted at AMSARA. The three case-series address 2006 EPTS discharges related to spinal curvature, shoulder instability, and internal knee derangement. These studies are descriptive in nature, although some statistical analyses were conducted. The description of DoDMERB applicants reveals that the top medical disqualifications for these officer applicants were asthma, atopic dermatitis or eczema, and myopia, and that patterns have generally remained consistent over time. The deployment and accession medical waivers report compares patterns of deployment among personnel receiving waivers for asthma, orthopedic issues, and psychiatric issues. In general, persons receiving waivers for these problems have patterns that are similar in frequency, time to deployment, and duration.

AMSARA not only analyzes and reports on the data but also evaluates the coding and quality of these data. In the report "Description of Interservice Separation Codes Utilized among Servicemembers Discharged for Conditions Existing Prior to Service," interservice separation codes (ISC) were evaluated for those servicemembers who were discharged with conditions existing prior to service (EPTS). This report found that there was very little agreement in the code reported for the service-specific EPTS discharges and the ISC codes reported by the Defense Manpower Data Center (DMDC). Most EPTS discharges from the Army, Navy, and Air Force were coded by DMDC as "unqualified for activity duty", and for the Marines, the most common ISC codes were "fraudulent entry" and "erroneous enlistment".

Section 2 of this report includes the descriptive statistics AMSARA compiles and publishes annually for historical and reference value. There is also a new sub-section on attrition, providing a basic description of all-cause attrition among first-time active duty recruits. Descriptive statistics are for applicants who enlisted in 2006 and are compared to the five year aggregate data from 2001-2005. Data are collected while the recruits remain on their first year of active duty (during calendar year 2007 for this report). By convention, the annual report is dated for the last year of data on which the analyses were performed. Comparisons can be made between services and on occasion between enlisted component (active, reserve, guard).

Approximately 288,000 Active, Reserve, and National Guard enlisted applicants were examined for medical fitness at Military Entrance Processing Stations (MEPS) in 2006 compared to approximately 294,000 per year average from 2001 to 2005. While the age, gender, and race of active duty enlisted and reserves applicants remained relatively consistent, in 2006 the guard were older compared to 2001-2005, with increases seen in the >30 years category. In 2006 a greater percentage of Active, Reserve and National Guard enlisted applicants scored in the lowest AFQT percentile for military eligibility (11-29th) as compared to the previous 5-year period.

Approximately 10% of applicants for active duty enlisted service were initially disqualified for service due to permanently disqualifying medical conditions, and another 10% received disqualifications for conditions that could be remediated, primarily excess body weight or marijuana use. Such recruits, however, are less likely to ultimately become servicemembers, as less than 6% of subsequent accessions were from among those with a permanent disqualification, and less than 8% were from among those with a temporary disqualification. The most common reasons for medical disqualifications in 2006 were exceeding weight/body fat limits and nondependent abuse of cannabis, both considered temporary disqualifications. These are followed by disorders of refraction and accommodation and hearing deficiency, both of which are permanent disqualifications.

While asthma and attentive disorders (ADHD) remain among the more common causes of medical disqualification, the proportion of all applicants disqualified for these conditions decreased considerably in 2006 compared to the previous 4-year period. This is likely attributable to recent relaxation of the asthma and ADHD standards to apply only to applicants who experienced complications after age 13 for asthma and within 1 year of accession for ADHD. These changes in standards were based, in part, on past AMSARA research that showed recruits granted waivers for these conditions have attrition and healthcare utilization patterns similar to fully qualified recruits.

Accession medical waivers are considered by each service for applicants with a disqualifying medical condition. Accordingly, the conditions most frequently considered for a waiver closely reflect the most common permanently disqualifying conditions. In total, almost 28,000 applications for accession medical waivers were considered in 2006. The percentage of waivers approved varies substantially by the medical condition being considered, with overall approval percentages ranging from 50 percent to over 90 percent. Over the past six years the Air Force has had the lowest approval percentage and the Army has had the highest. Differences in approval percentages between the services may reflect differences in the applicant pools applying to the services, different distributions of conditions being considered for waiver, or different needs of each service. It is interesting to note that the waiver approval percentage has shown a modest decline over the past six years while the need for new recruits in the Army has risen during that time. One possible explanation for this result is that the accession medical standards for some conditions commonly waived, such as pre-adolescent asthma or ADHD, have been removed from the list of disqualifying conditions.

Hospitalization data are provided for the period 2001-2006. Numbers of hospitalizations and of individuals hospitalized among first year enlistees have declined significantly over this period, from a high of over 7,000 admissions in 2001 to a low of less than 4,000 in 2006. This decline might be due, in part, to the increase of servicemembers serving in areas overseas without immediate access to fixed military medical treatment facilities. The top reasons for hospitalization within the first year of service for all services in 2006 as well as 2001-2005 were psychiatric conditions, pneumonia and influenza, and skin and subcutaneous infections. Army enlistees had the highest risk of hospitalization, and first year enlistees in the Navy, Marines, and Air Force had significantly less risk by comparison. Being female, older in age at enlistment, and having a lower military aptitude score (AFQT) were risk factors for hospitalization.

Discharges of recent enlistees for medical conditions that existed prior to service (EPTS) are a costly problem for all branches of the military, and are considerably more common than data would indicate. Documentation of EPTS discharges is requested from each Initial Entry Training (IET) sites to USMEPCOM but this reporting is not required by service regulations.

The total numbers of reported discharges have remained relatively stable over time, ranging from a high of approximately 8000 in 2003 to a low of about 6200 in 2006.

Past AMSARA studies have shown that the great majority of EPTS discharges are for medical conditions that were not discovered or disclosed at the time of application for service, with concealment by the applicant being the most common scenario. Accordingly, the primary problem of EPTS discharges appears to be the bypassing of accession medical standards rather than the implementation of those standards. Psychiatric conditions, orthopedic conditions, and asthma are the most common causes of EPTS discharges reported to USMEPCOM. Increased risk of EPTS discharge is seen with being female, increasing age, being white compared to other races, and with having lower AFQT scores.

Disability discharge is very infrequent among new enlistees, with less than one percent of enlistees being considered for such a discharge. Disability discharges among first-year Army and Air Force enlistees have tended to increase through 2005. The majority of disability discharges for both Army and Air Force were impairments and diseases of the spine, skull, limbs, and extremities, other diseases of the musculoskeletal system, and affective and nonpsychotic mental disorders. Data on Navy and Marine disability discharges are not currently available to AMSARA.

In addition to the description of medical disqualifications at MEPS, waiver applications and approvals, hospitalizations, and EPTS and disability discharges, AMSARA has also begun to describe the all-cause attrition profile of first-time active duty recruits following 90, 180, 365, and 730 days of service. At one year, the Army had the highest rate of attrition for all times considered (approximately 18%) while the Air Force had the lowest (about 12%). Being male, between the ages of 18 and 21, with a Bachelor's degree or higher, and having scored in the highest percentile score group on the AFQT are all characteristics associated with significantly lower attrition at all points of assessment. The association of AFQT score and education level with attrition may be related to the range of career opportunities open to the various levels of academic qualification and aptitude.

AMSARA is committed to further development of evidence-based medical accession standards to enable the DoD to enlist the highest quality applicants in a cost-effective manner, thereby ensuring a healthy, fit, and effective force. The following programmatic recommendations are based on 12 years of research:

1. Various databases must be improved. For example, waiver data do not provide sufficient clinical detail to allow analyses of waiver decision criteria.

2. EPTS classification and reporting from the IET sites to MEPCOM, which is still passive, should be mandated and standardized by DoD/service regulations. Analysis would be enhanced with conversion from paper to digital records.

3. AMSARA should continue prospective studies similar to the ARMS that challenge current accession standards. MEPS-based studies that are outcome oriented (including morbidity, occupational qualification and performance, deployability, and attrition) in the area of physical and mental fitness, including motivation to serve, should be prioritized.

4. Rather than study accession medical standards in isolation, the medical standards across the continuum of a servicemember's life-cycle should be analyzed using evidence-based principles. This would include medical standards for deployment and retention, in addition to accession medical standards.

5. AMSARA should develop expertise in cost-benefit analyses in order to better advise DoD medical standards policy makers.

Introduction

The Medical-Personnel Executive Steering Committee (formerly the Accession Medical Standards Steering Committee) was established by the Under Secretary of Defense (Personnel and Readiness) to integrate the medical and personnel communities so they could provide policy guidance and establish standards for accession requirements. These standards would stem from evidence-based information provided by analysis and research. The committee is co-chaired by the Under Deputy Assistant Secretary of Defense (Military Personnel Policy) and the Deputy Assistant Secretary of Defense (Clinical and Program Policy) and comprises representatives from the Office of the Assistant Secretary of Defense (Force Health Protection and Readiness), Office of the Assistant Secretary of Defense (Health Affairs), Office of the Assistant Secretary of Defense (Reserve Affairs), Offices of the Service Surgeons General, Offices of the Service Deputy Chiefs of Staff for Personnel, and Health and Safety Directorate (Department of Homeland Security, U.S. Coast Guard).

The Accession Medical Standards Working Group is a subordinate working group that reviews accession medical policy issues contained in DoD Instruction 6130.4, entitled "Medical Standards for Appointment, Enlistment, or Induction in the Armed Forces." This group is composed of representatives from each of the offices listed above.

AMSARA was established in 1996 within the Division of Preventive Medicine at Walter Reed Army Institute of Research to support the efforts of the Accession Medical Standards Working Group. The mission of AMSARA is to support the development of evidence-based accession standards by guiding the improvement of medical and administrative databases, conducting epidemiologic analyses, and integrating relevant operational, clinical, and economic considerations into policy recommendations. AMSARA has the following seven key objectives:

1. Validate current and proposed standards utilizing existing databases (e.g., should asthma as a child be disqualifying?);
2. Incorporate prospective research studies to challenge selected standards (e.g., are body weight standards adequate measures of fitness?);
3. Validate assessment techniques (e.g., improve current screening tools);
4. Perform quality assurance (e.g., monitor geographic variation);
5. Optimize assessment techniques (e.g., develop attrition and morbidity prediction models);
6. Track impact of policies, procedures, and waivers;
7. Recommend changes to enhance readiness, protect health, and save money.

Military staffing to support this effort includes the Chief, AMSARA, MAJ Sheryl Bedno and the Chief, Epidemiology and Deputy Director, Division of Preventive Medicine, COL David W. Niebuhr.

AMSARA is augmented with contract support through Allied Technology Group. Current staff includes Project Manager, Dr. David N. Cowan; Senior Statistician, Dr. Yuanzhang Li; Statisticians, Weiwei Han and Robert Federici; Analysts, Elizabeth Packnett, Dr. Natalya Weber and Bennett Datu; Data Manager, Janice Gary; and Program Administrative Assistant, Vielka Rivera.

1. SPECIAL STUDIES

Case Series Review: Existing Prior to Service Discharges for Spinal Curvature in 2006

Background

The United States Military Entrance Processing Command (USMEPCOM) is responsible for screening applicant to the armed services in accordance with medical standards set forth by Department of Defense Instruction (DoDI) 6130.4. Applicants complete a multi-step process, including a medical examination at one of the 65 Medical Entrance Processing Station (MEPS) across the country. In some instances, applicants are deemed qualified for service despite the presence of a disqualifying condition because the applicant was unaware of the condition, the applicant concealed medical history, the applicant received a waiver, or medical processing or judgment were incorrect. Recruits may be discharged from the armed services under an Existing Prior to Service (EPTS) discharge if a disqualifying medical condition is verified to have existed prior to the recruit began service and the condition was detected within 180 days of accession. When EPTS discharges are voluntarily reported from training sites, USMEPCOM reviews each case and assigns a code to reflect the reason the applicant was allowed to enter training with a disqualifying condition. The purpose of this study is to review and evaluate spinal curvature EPTS records to support AMSARA's efforts to maximize accession and minimize attrition.

Data and Methods

The study is a retrospective, descriptive case series review of EPTS discharges with a diagnosis of spinal curvature during the 2006 calendar year. The distribution of case demographics was compared to the 2005 accessions using Chi-square tests. Cases were identified from voluntary EPTS reports sent to USMEPCOM from training sites. Ninety-four records were reported with International Classification of Disease (ICD-9) codes beginning with 737 as the primary or secondary diagnosis. Of these, 18 records were unavailable for review and 5 lacked sufficient data for inclusion. The remaining 71 cases were included in this review. The review process for EPTS records included collecting data from the MEPS examination, namely DD Form 2807-1 (Report of Medical History), DD Form 2808 (Report of Medical Examination), and additional EPTS records such as SF 600, DA Form 4707, and radiology reports. Age is calculated at the date of the MEPS examination.

Results

Demographic characteristics are presented in Table 1.1. The age range was 17 to 28 years with a median of 19 years. There were no significant differences between cases and the 2005 accession population by age or race, though cases were more likely to be female ($p<0.01$). Most cases were aged 17-20 (67.6%), male (67.6%), and white (72.5%).

TABLE 1.1 DEMOGRAPHIC CHARACTERISTICS OF EPTS DISCHARGES FOR SPINAL CURVATURE (2006) COMPARED TO ACTIVE DUTY ACCESSION POPULATION (2005)

	EPTS Cases (N=71)		2005 Accessions (N=129,295)	
	Count	Percent	Count	Percent
Age				
17-20 years	48	67.6	91,180	70.5
21-25 years	17	23.9	30,999	24.0
26-30 years	6	8.5	5,514	4.3
Over 30 years	0*	0.0	1,602	1.2
Gender				
Male	48	67.6	108,529	83.9
Female	23	32.4	20,776	16.1
Race				
White	50	72.5	89,888	69.5
Black	7	10.1	17,730	13.7
Other	12	17.4	21,677	16.8
Unknown	2	*	-	*

- Unknowns not used to calculate percentages and, zero cells and the unknown category were eliminated from statistical tests.

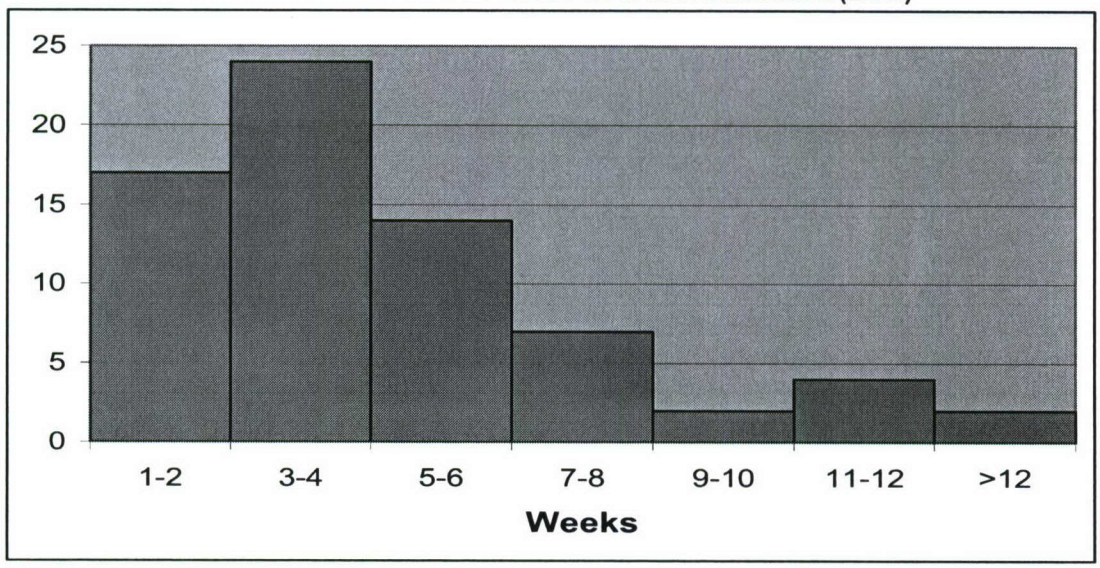
The distribution of EPTS discharges by service is shown in Table 1.2. There were more EPTS discharges among Army and Navy recruits and fewer EPTS discharges among Air Force and Marines recruits compared to accessions in 2005. These differences were statistically significant.

TABLE 1.2 EPTS DISCHARGES FOR SPINAL CURVATURE (2006) COMPARED TO TOTAL EPTS DISCHARGES (2005) BY SERVICE

Service	EPTS Cases (N=71)		2005 Accessions (N=129,925)	
	Count	Percent	Count	Percent
Air Force	4	5.6	23,107	17.9
Army	25	35.2	41,215	31.9
Marines	12	16.9	30,711	23.8
Navy	30	42.3	34,262	26.5

The number of training weeks at EPTS discharge is shown in Figure 1.1. The range was 1-19 weeks with a median of 4 weeks. Most spinal curvature EPTS discharges occur within 6 weeks after beginning training.

FIGURE 1.1 WEEK OF TRAINING FOR EPTS DISCHARGES FOR SPINAL CURVATURE (2006)



*DATA FOR ONE CASE WAS MISSING. (N = 70)

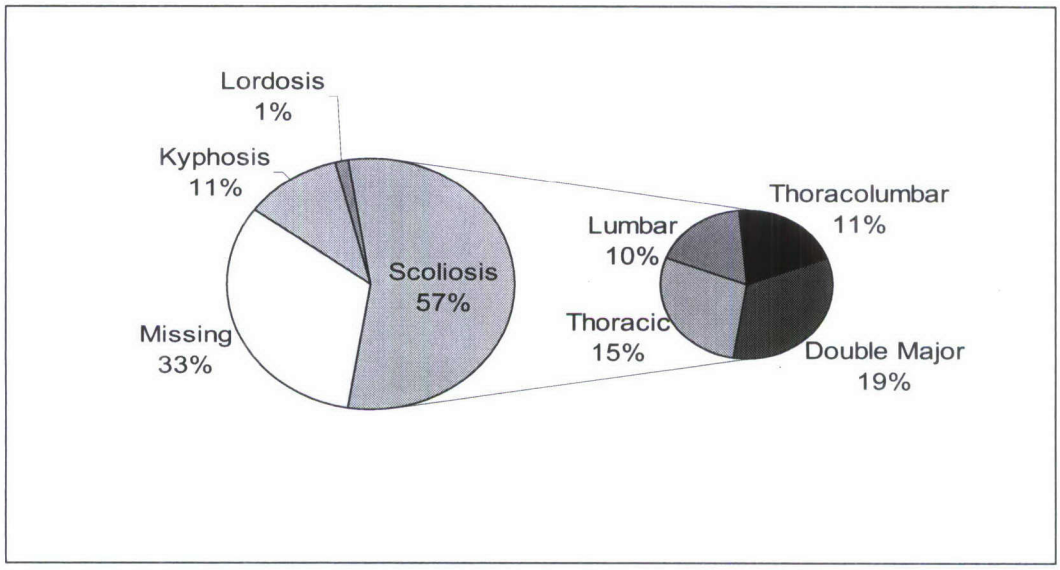
MEPS spinal curvature detection rates, x-ray request rates at MEPS, and subsequent clinical evaluation at the time of EPTS are shown in Table 1.3. MEPS examiners detected 25.4% of spinal curvature, yet only requested x-rays in 21.1% of cases. At the time of EPTS, 14.1% of cases lacked documentation of an x-ray request. Many more (43.7%) lacked reporting of Cobb angles.

TABLE 1.3 MEPS DETECTION, X-RAY REQUESTS, AND EPTS CLINICAL EVALUATION FOR SPINAL CURVATURE (2006)

	EPTS Cases (N=71)	
	Count	Percent
MEPS Spinal Curvature Detection		
Yes	18	25.4
No	53	74.6
MEPS X-Ray Request		
Yes	15	21.1
No	56	78.9
EPTS X-Ray Request		
Yes	61	85.9
No	10	14.1
Cobb Angles Included in EPTS File		
Yes	40	56.3
No	31	43.7

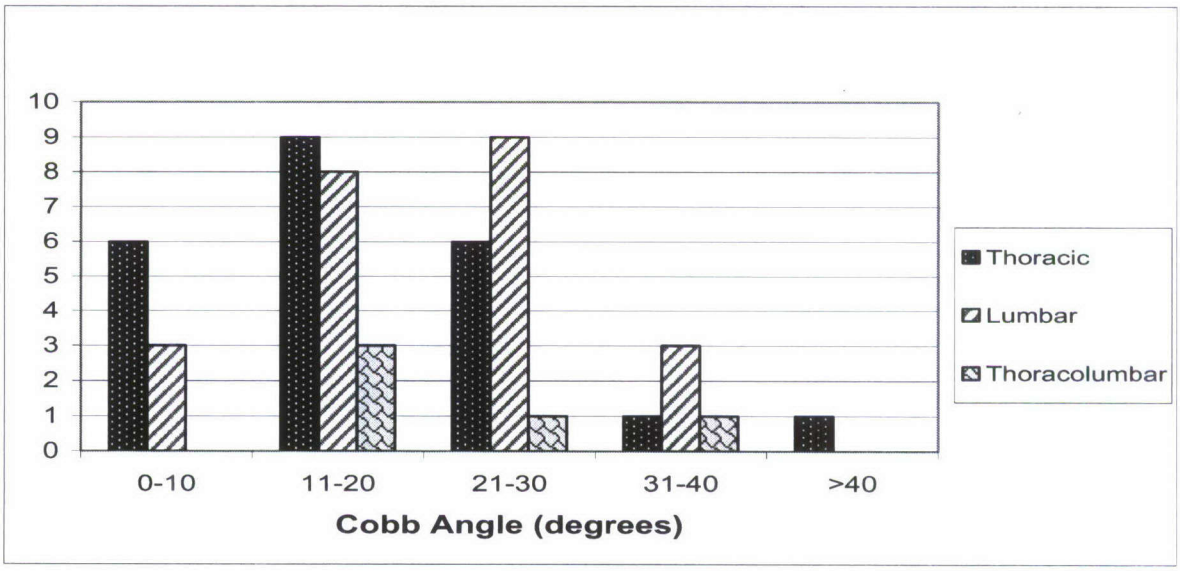
Available data for curve types (i.e. scoliosis, kyphosis, lordosis) and subtypes of scoliosis (i.e. thoracic, lumbar, thoracolumbar, double major) are shown in Figure 1.2. Curve types were missing in one third of the cases. The majority (57%) of cases were scoliosis, 11% were kyphosis, and 1% were lordosis. Among scoliosis subtypes, double major curves were the most prevalent (19% of all cases), followed by thoracic, thoracolumbar, and lumbar.

FIGURE 1.2 SPINAL CURVATURE TYPES AND SCOLIOSIS SUBTYPES FORSPINAL CURVATURE EPTS DISCHARGES (2006) N = 71



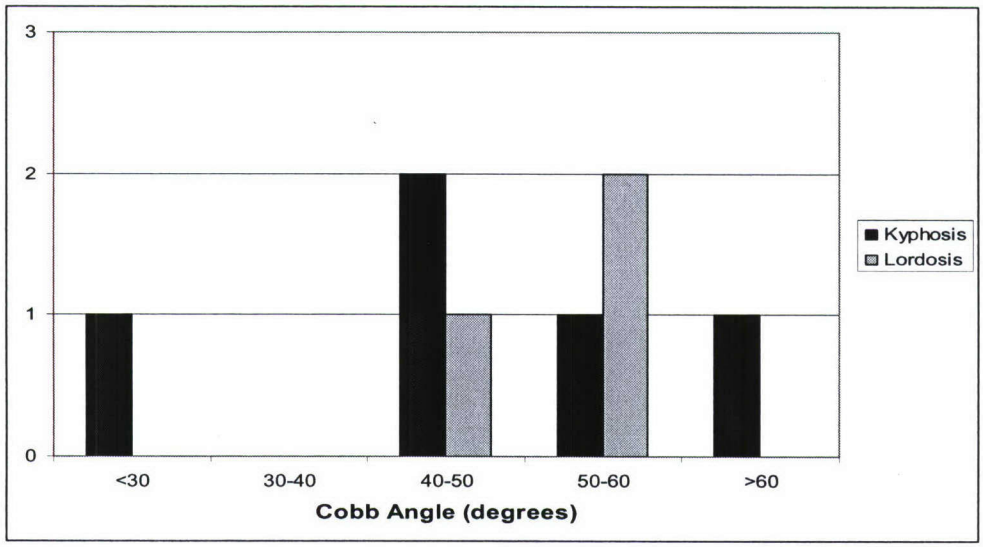
Spinal angles by the Cobb method scoliosis cases are shown in Figure 1.3. All reported angles are included. Each case may be associated with multiple angles. For example, double major curves have both a thoracic and lumbar angle reported. Cases with spinal angles less than 10 degrees are by definition not scoliosis. Reported lumbar angles less than 20 degrees, or approximately half of all lumbar angles reported, are below the current cut-off in DoD 6130.4. Similarly, reported thoracic angles less than 30 degrees, which amount to nearly all of the thoracic angles reported, are below the current cut-off in DoD 6130.4

FIGURE 1.3 SPINAL ANGLES BY THE COBB METHOD FOR SCOLIOSIS CASES



Spinal angles by the Cobb method for kyphosis and lordosis cases are shown in Figure 1.4. All but one of the kyphosis angles reported (80%) fall below the current DoDI 6130.4 cut-off. One third of the lordosis angles reported fall below the DoDI 6130.4 cut-off.

FIGURE 1.4 ANGLES BY THE COBB METHOD FOR KYPHOSIS AND LORDOSIS CASES



An evaluation of the USMEPCOM assigned EPTS Type codes is shown in Table 1.4. There is a 74.6% concordance rate between USMEPCOM and the case series assignments.

TABLE 1.4 USMEPCOM ASSIGNED EPTS TYPE COMPARED WITH MODIFIED EPTS TYPE ASSIGNED IN THIS CASE SERIES REVIEW (CONCORDANT CELL ARE SHADED)

USMEPCOM Assigned	Modified EPTS Codes Assigned					Total
	Applicant Unaware	Medical Judgment	MEPS Error	Concealed History	Condition Waivered	
Applicant Unaware	19			9		28
Medical Judgment	2	6	3	3		14
MEPS Error						0
Concealed History				23		23
Condition Waivered		1			5	6
Total	21	7	3	35	5	71

Discussion

The demographic characteristics of the cases were similar to that of the 2005 active duty accessions with the exception of the increased female to male ratio in the cases. Given the higher prevalence of more severe curvature in females, this finding is expected.

MEPS detected 25% of spinal curvature at examination in this case series. The screening test currently used by USMEPCOM for scoliosis, the Adams forward bend test, is not ideal, but the scoliometer does not prove to be significantly better. The neurological and orthopedic exam, which includes the Adams forward bend test, is currently done by groups of individuals undergoing MEPS examination, which likely makes the test even less reliable for screening. Additionally, applicants cannot be relied upon for accurate history. Nearly 50% of applicants in this case series concealed a prior history of back pain, and 18% concealed a prior diagnosis of scoliosis.

At MEPS, the rate of spinal curvature detection is higher than the rate of x-ray requests. This indicates that some MEPS examiners are using clinical judgment to estimate Cobb angles, which must be calculated from a standing anteroposterior radiograph.

EPTS records are frequently incomplete. In this case series, 14% of the cases were lacking evidence of any radiology performed to support EPTS discharge for spinal curvature. Forty-four percent of cases lacked Cobb angles in the EPTS records. With the current version of the DoDI 6130.4, the Cobb angles are unnecessary for discharge as long as the recruit is symptomatic, but the collection and reporting of this data could aid in future recommendations for medical standards.

The lack of clinical data, including radiology reports with Cobb angles, made it difficult to quantify the curve types in the case series. Curve type could not be determined in one third of the cases. Scoliosis was the leading diagnosis for spinal curvature discharge accounting for 57% of this case series, followed by kyphosis and lordosis with 11% and 1%, respectively. Among scoliosis cases, double major curves predominated, accounting for 19% of all cases, followed by thoracic curves in 15% of cases. It may be that although thoracic curves are more common, double major curves may result in more EPTS discharges as a result of their curve complexity and potential to cause increased symptoms.

Evidence to support the current DoDI 6130.4 cut-off levels for lumbar scoliosis, thoracic scoliosis, kyphosis, and lordosis could not be found. About half of lumbar angles reported and nearly all of kyphosis angles reported are below the respective DoDI 6130.4 cut-offs. Similarly, most kyphosis angles reported are below the current cut-off. These results suggest that the current spinal curvature standard is not adequate to minimize attrition.

There was a 74.6% concordance rate between USMEPCOM EPTS Type assignments and those assigned in this case review. While this may represent misclassification bias, it may simply be that the algorithm for assigning codes differed from USMEPCOM and this review. Giving priority to one code can easily change the results.

Case Series Review: Existing Prior to Service Discharges for Shoulder Instability in 2006

Introduction

Instability of the shoulder may occur in patients who have had repetitive injuries, or congenital laxity of the shoulder. This occurs in young active individuals without laxity and in sedentary patients with hypermobile joints. It is more common people with poor muscular development and athletes with rotator muscle tears. There are few reports detailing the incidence of shoulder instability. Over a ten year period, one study reported an incident rate of anterior shoulder dislocation of 8.3 per 100,000 person years. (1) Incidence in studies performed in Europe ranged from 17 to 23.9 per 100,000 person years. (2-3). More recently, it was found that 2.8% of West Point students suffered an event of shoulder instability during one academic year (4).

Department of Defense (DoD) Instruction 6130.4 addresses shoulder instability as a current dislocation if unreduced, or a history of dislocation of any major joint such as shoulder; instability of any major joint [shoulder]; current disease, injury, or congenital condition with residual weakness or symptoms such as to prevent satisfactory performance of duty (5). Furthermore, a history of recurrent instability or dislocation without current presentation is disqualifying. A descriptive analysis of EPTS discharges for shoulder instability among active duty enlistees in the Army, Navy, Marines, and Air Force follows.

Methods

The study is a retrospective, descriptive case series review of a population of 110 recruits discharged from the military for shoulder instability EPTS. EPTS discharge records received by MEPCOM with a diagnosis of shoulder instability were reviewed. Of the 110 cases, three lacked adequate information and were discarded. Diagnoses were classified under Department of Defense (DoD) Instruction as 718.1 (shoulder instability), 831 (shoulder dislocation) and 719.41 (shoulder pain). These were the sole basis of case selection. Cases included Army, Navy, Air Force, and Marine recruits discharged in 2006. The three Coast Guard cases were excluded due to a low count in this group. The remaining 104 cases were included in this review. Age, race, and sex were not considered when defining the sample population. Cases were reviewed by a single, nonblinded reviewer using a standardized questionnaire. The same criteria were used to evaluate each case.

Initially, a literature search of shoulder instability was performed and the most pertinent variables were compiled. After controlling for representative distribution by service, a random sample of approximately 25% of the records were reviewed to determine the availability of data. Using Microsoft Access, a form was produced to help extract data. This form was then utilized by a single reviewer, to manually extract data from each EPTS file. These data were then put into a Microsoft Access database for analysis.

The degree of concealment of a recruits shoulder instability condition was classified by MEPCOM. Each case was assigned one of the following categories: A) the applicant was unaware of the existence of the condition, B) a potentially disqualifying condition that was not felt to be disqualifying, based on sound clinical judgment, C) a condition that should have been

detected and disqualified at the MEPS, D) a condition undetected due to concealment of history by the applicant, E) a condition waivered by the appropriate service waiver authority, and W) insufficient data upon which to determine a code.

Body Mass Index (BMI) at the initial presentation for physical examination at a Military Entrance Processing Stations (MEPS) was calculated for each case. The BMI was classified using universal WHO/CDC guideline: Underweight (< 18.5), Normal Weight (18.5 to 24.9), Overweight (25.0 – 29.9), Obese (>30.0). The demographic distribution of cases was compared to the 2005 accessions using Chi-square tests.

Results

The distribution of EPTS discharges for shoulder instability is shown by service in Table 1.5. Navy (26%) and Marines (24%) EPTS cases were comparable to 2005 accession records. However, Army (39%) EPTS discharges were more prevalent than expected based on 2005 accessions, while Air Force (12%) EPTS discharges were less prevalent than expected based on 2006 accessions.

TABLE 1.5 EPTS DISCHARGES FOR SHOULDER INSTABILITY COMPARED TO MEPS ACCESSION POPULATION BY (2005)

Service	EPTS Cases (n=104)		Accessions (n=129,925)
	Count	Percent	Percent
Army	41	39.4	31.9
Navy	27	26.0	26.5
Air Force	12	11.5	17.9
Marines	24	23.1	23.8

The demographic profile of EPTS discharges for shoulder instability is shown in Table 1.6 Most cases were aged 17-20 (68%), male (88%), and white (85%). There were no significant differences in age and gender between the cases and the 2005 accessions. There was a higher percentage of whites (85%, $p<0.01$) than expected in the MEPS accession population.

TABLE 1.6 EPTS DISCHARGES FOR SHOULDER INSTABILITY COMPARED TO MEPS ACCESSION POPULATION BY AGE, GENDER, AND RACE (2005)

	EPTS Cases (n=104)		Accessions (n= 129,925)
	Count	Percent	Percent
Age			
17-20	71	68.3	70.5
21-24	23	22.1	21.8
25-28	7	6.7	5.5
>28	2	1.9	2.2
Unknown	1	1.0	-
Gender			
Male	91	87.5	83.9
Female	13	12.5	16.1
Race			
White	88	84.6	69.5
Black	6	5.8	13.7
Native American	5	4.8	3.1
Other	4	3.8	13.7

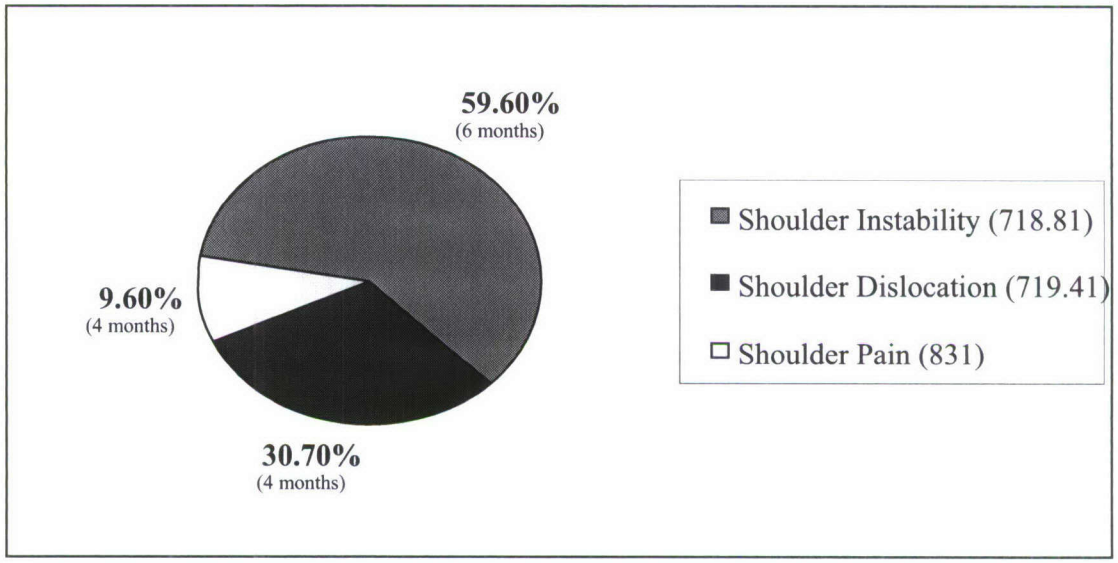
BMI calculated from height and weight data obtained from the MEPS physical exam, is detailed in Table 1.7. Only one recruit was underweight. Cases were more likely to be overweight or obese than the 2005 accessions ($p<0.01$), and there was evidence of a trend of increasing risk with increasing BMI.

TABLE 1.7 BMI AT INITIAL MEPS EXAMINATION FOR EPTS DISCHARGES WITH SHOULDER INSTABILITY (2005)

Body Mass Index	EPTS Cases (n=104)		Accessions (n=129,925)
	Count	Percent	Percent
Underweight (<18.5)	1	1	4.4
Normal weight (18.5-24.9)	50	48.1	57.1
Overweight (25.0-29.9)	41	39.4	33.4
Obese (>29.9)	12	10.0	5.2

The term shoulder instability can be applied to cases ranging from a chronic history of multidirectional shoulder instability to the sequel of repeated shoulder dislocations. Therefore, EPTS cases with a primary or secondary diagnosis carrying a ICD-9 code 831 (shoulder dislocation), 718.81 (shoulder instability), and 719.41 (shoulder pain) were included. Approximately 60% were diagnosed with shoulder instability, 32% with shoulder dislocation, and 10% with shoulder pain. The symptoms of each of these diagnoses often coexist. However, each case varies in severity, origin, and chronicity. Figure 1.5 depicts the percentages of each of these diagnoses. Furthermore, it shows the median number of months from initial physical exam at MEPS to the date of EPTS discharge. It took longer for recruits with a specific diagnosis of shoulder instability to be discharged (6 months) when compared to the shoulder pain/dislocation (4 months each).

FIGURE 1.5 PERCENTAGE OF DIAGNOSTIC CODES AND THE MEDIAN DURATION BETWEEN MEPS TO EPTS DISCHARGE FOR SHOULDER INSTABILITY (2006)



There are many competing factors that may cause an applicant to avoid medical disqualification prior to accession. Table 1.8 illustrates these factors via the MEPCOM categorization codes of 2006 EPTS discharges for shoulder instability. MEPCOM reported that 81 EPTS records (77%) demonstrated evidence of concealment. Only two records (2%) had insufficient evidence to make a determination with respect to concealment. Interestingly, no cases (0%) were found to have a condition that should have been detected and disqualified at the MEPS and were not.

TABLE 1.8 MEPCOM CATEGORIZATION OF CAUSES EPTS DISCHARGES FOR SHOULDER INSTABILITY (2006)

MEPCOM Category	EPTS Cases (n=104)	
	Count	Percent
Applicant Unaware	5	4.8
Medical Judgment	4	3.8
MEPS Error	0	0
Concealed History	81	77.9
Condition Waived	12	11.5
Insufficient Data	2	1.9

Time since injury occurred prior to enlistment for EPTS discharges for shoulder instability is shown in Table 1.9. The duration since injury is of interest when determining the chronic nature of shoulder instability. The majority of injuries occurred 1-3 years prior to EPTS discharge (34% injuries). However, some injuries (12%) occurred greater than six years prior.

TABLE 1.9 TIME SINCE INJURY OCCURRED PRIOR TO EPTS DISCHARGE WITH SHOULDER INSTABILITY (2006)

Time Since Injury	EPTS Cases (n=104)	
	Count	Percent
1 Year	13	12.5
1-3 Years	32	30.8
4-6 Years	13	12.5
> 6 Years	11	10.6
No Injury	10	9.6
Unknown injury status	25	24.0

Table 1.10 presents the numbers and percents of waivers granted after an orthopedic referral. Only 15% of the recruits received an orthopedic referral to evaluate pertinent history or physical finding consistent with shoulder instability. A higher percentage of those recruits with an orthopedic referral received a waiver (38%) when compared to those who did not receive an orthopedic referral at MEPS (8%).

TABLE 1.10 PROPORTION OF WAIVERS GRANTED DEPENDANT UPON ORTHOPEDIC REFERRAL AT MEPS FOR EPTS DISCHARGES WITH SHOULDER INSTABILITY (2006)

Waiver Granted	MEPS Ortho Referral		No MEPS Ortho Referral	
	Count	Percent	Count	Percent
No	10	62.5	81	92.0
Yes	6	37.5	7	8.0
Total	16	100	88	100

The time from initial presentation at MEPS until EPTS discharge is detailed in Table 1.11. The documentation of the exact date of accession was not documented consistently across training locations. Therefore, the reliability and consistency of the initial MEPS date was used as starting point. Over two thirds of the cases occurred within the first eight months after MEPS. The distribution during this time period was approximately 16% for each two month interval little deviation. Within one year after MEPS over 85% of cases had been discharged. The proportion of discharges falls off steeply after one year. Only 2% of cases took longer than a year and a half for discharge. Noteworthy, two cases did not contain the date of their MEPS evaluation in their record.

TABLE 1.11 MONTHS ELAPSED FROM INITIAL MEPS PRESENTATION TO EPTS DISCHARGE FOR SHOULDER INSTABILITY (2006)

Months	Total Cases (n=104)	
	Count	Percent
0-1	17	16.3
2-3	17	16.3
4-5	18	17.3
6-7	17	16.3
8-9	11	10.6
10-11	10	9.6
12-18	10	9.6
>18	2	1.9
MEPS Date Unknown	2	1.9

Conclusion

In 2006, those recruits receiving EPTS discharges under ICD-9 codes 718.81 (shoulder instability), 719.41 (shoulder pain), and 831 (shoulder dislocation) were significantly more likely to be white, and have higher BMI than the general 2005 accession population. There were no significant differences between cases and the 2005 accession population for branch of service, gender, or age.

Eighty five percent of the recruits studied received their EPTS discharge for shoulder instability within one year from initial MEPS physical exam. Initial Entry Training places recruits under strenuous physical demands, and this environment may have been necessary for shoulder instability to become evident. However, this argument is countered by the fact that only 5% of the recruits studied were determined to be unaware of the existence of this condition. As well, the majority had a prior history of sports, which implies a high level of physical activity in the past.

This review has a number of limitations, including the lack of standardization in reporting. This lack of standardization leads to poor documentation as many important variables are missing from many records. For example, it was difficult to determine the number of days of training completed by each recruit. Non-standardized and often limited reporting ranged from a numerical coding system to missing outright. Furthermore, some training sites included very little information in an EPTS file, while others had overwhelming amounts of civilian medical records. In addition, data fields of interest documented at some training sites had to be excluded because the majority of training sites did not include this information. Such fields included the date presented with complaint at IET, cause of presenting symptoms at IET, and steps necessary for a recruit to return to full duty. Finally, the lack of standardization and poor documentation left many files with fields left as unknown.

Another limitation is that reporting of EPTS discharges to MEPCOM is voluntary. Thus, not all EPTS discharges for shoulder instability may have been reported in 2006.

A final limitation is that shoulder instability can involve different ICD-9 codes. Shoulder instability is a complex entity and a single ICD-9 code does not adequately describe or identify all cases. Recruits discharged with a diagnosis of chronic shoulder pain/dislocation were included in this study. Though these diagnoses are integral to the development and existence of shoulder instability, they are somewhat ambiguous. More detailed information, documentation, or official guidance pertaining to severity and specificity would improve the correct identification and diagnosis of the condition.

References

1. Simonet WT, Melton LJ, Cofield RH, Ilstrup DM. Incidence of anterior shoulder dislocation in Olmstead County, Minnesota. *Clin Orthop Relat R.* 1984;186:186-19.

2. Kroner K, Lind I, Jensen J. The epidemiology of shoulder dislocations. *Arch Orthop Traum Su.* 1989;108:288-290.

3. Rowe CR, Zarina B. Recurrent transient subluxation of the shoulder. *J Bone Joint Surg Am.* 1981;63:863-872.

4. Owens BD, Duffey ML, Nelson BJ, DeBerardino TM, Taylor DC, Mountcastle SB. The Incidence and Characteristics of Shoulder Instability at the United States Military Academy. *Am J Sport Med.* 2007;35;7:1168-1173.

5. U.S. Department of Defense. Medical Standards for Appointment, Enlistment, or Induction in the Armed Forces. Washington DC. Department of Defense, 2004 (DoD Instruction 6130.4).

Case Series Review: Existing Prior to Service Discharges for Internal Knee Derangement in 2006

Background

Recruits entering the U.S armed forces undergo a medical screening process, which occurs at the Military Entrance Processing Stations, or MEPS. The medical screening process there requires them to answer a battery of questions pertaining to their medical history and undergo a physical examination. The musculoskeletal examination is a general screening examination for those recruits that deny a prior history of orthopedic injuries; joint specific examinations are performed only on recruits with a history of orthopedic injuries. Such a general screening examination, often called the "two minute" orthopedic examination, is generally accepted screening practice for patients without a significant orthopedic history. (1) These criteria are used in the screening process at each MEPS, as well as by the physicians at the various training installation to recommend an EPTS discharge for internal knee derangement. In order to be classified as EPTS, the condition must be verified to have existed before the recruit began service, and the complications leading to discharge must arise no more than 180 days after the recruit begins duty. The purpose of this study is to review and evaluate internal knee derangement EPTS records to support AMSARA's efforts to maximize accession and minimize attrition.

Methods

This is a retrospective case series using MEPS records and clinical medical records generated while at basic and/or initial entry training of 68 military recruits who received an EPTS discharge for knee symptoms. Case selection was based on the presence of knee-specific ICD codes in their discharge records. These ICD codes included 719.46 (Chronic Knee Pain), 718.86 (Chronic Knee Instability), P81.4 (History of Knee Surgery), 717.83 (Uncorrected ACL injury), and 717.9 (Internal Knee Derangement). The cases included Army, Navy, Marine, Air Force, and Coast Guard recruits that were discharged during 2006. Of the 68 cases reviewed, 19 were omitted because only extra-articular knee derangement was involved. Four others involved other types of knee conditions and were also omitted.

Each record was assigned a numeric subject identifier, and raw clinical data from each of the records was initially entered directly into Microsoft Excel. Once entered into excel it could be merged with demographic data provided by MEPCOM about the same subjects using their subject identifier to match the two sets. The data provided by MEPCOM also included each recruits EPTS category (see Table 1.16 from the results section). Of the 68 records reviewed, only 51 had corresponding demographic/EPTS category data available from MEPCOM. This missing data was found in the recruit's records in each case, and inserted where necessary.

Many of EPTS discharges were accessed in 2005. Therefore, the enlisted accessions in 2005 were used as the referent or expected distribution. The case demographic distribution was compared to the parent distribution using chi-square.

Results

EPTS discharges for knee derangement are shown in Table 1.12 relative to the accessed population by service. In 2005, discharges from the Army (42.9% of total) and the Marines (31%) represented the majority of the EPTS discharges for knee derangement. The observed proportion of EPTS discharges for knee derangement from both the Army and the Marines exceeded the proportion expected based on accession records. The observed proportion of EPTS discharges for knee derangement accounted for by the Air Force was lower than expected based on Accession records, but the differences were not statistically significant.

TABLE 1.12 NUMBER OF RECRUITS EXPERIENCING EPTS DISCHARGES FOR INTERNAL KNEE DERANGEMENTS COMPARED TO MEPS ACCESSION POPULATION (2005) BY SERVICE

Service	EPTS cases (n=45)		Accessions (n = 129,925)
	Count	Percent	Percent
Army	18	42.9	31.9
Navy	8	19	26.5
Air Force	3	7.1	17.9
Marines	13	31	23.8
Coast Guard	3	*	*

Table 1.13 shows the demographic characteristics of individuals with an EPTS discharge for knee derangement relative to the population of accessions. Most of the EPTS discharges for knee derangement were between the ages of 17-20, were male, and were white. This is consistent with the characteristics of the accessed population. The observed percentage of individuals among the groups over the age of 21 who experienced an EPTS discharges for knee derangement were greater than would be expected from the accessed population. Further, the difference between the observed proportion of EPTS discharges and the expected proportion EPTS discharges for knee derangement becomes larger in each increasing age group, indicating the potential for an increase in risk with increasing age. There was no difference in the gender distribution between cases and accessions. Due to small number of race "other" and "unknown", we examined the case distribution based on whites and blacks only, and although the risk among whites appeared to be higher, no significant difference was found ($p=0.30$).

TABLE 1.13 NUMBER OF 2006 RECRUITS EXPERIENCING EPTS DISCHARGES FOR INTERNAL KNEE DERANGEMENT COMPARED TO MEPS ACCESSION POPULATION (2005) BY AGE, GENDER, AND RACE

	EPTS Cases (n=45)		Accessions (n= 129,925)
	Count	Percent	Percent
Age			
17-20	27	60	70.5
21-25	12	26.7	24.0
26-30	4	8.9	4.26
>30	2	4.4	1.2
Gender			
Male	38	84.4	83.9
Female	7	15.6	16.1
Race			
White	38	84.4	69.5
Black	5	11.1	13.7
Other	1	2.2	16.8
Unknown	1	2.2	*

Table 1.14 shows the types of injuries, documented in medical records, which preceeded EPTS discharges. Injuries involving the ACL were most frequently documented injury and made up 69% of all injuries.

TABLE 1.14 TYPE OF INJURIES DIAGNOSED AMONG 2006 RECRUITS EXPERIENCING EPTS DISCHARGES FOR INTERNAL KNEE DERANGEMENT

Injury Type (n=45)	Count	Percent
ACL	21	47
Meniscus	7	16
ACL + Meniscus	9	20
Bilateral ACL	4	2
Other	5	11
Unknown	1	2

Table 1.15 shows the amount of time that passed since the recruits' surgery to presentation at basic training. Table 1.15 only includes data from those recruits listed under "Unilateral ACL", "Meniscus", and "ACL + Meniscus" in Table 1.14. Recruits from the "ACL + Meniscus" column in Table 1.14 are included below in both categories. In those recruits that had an ACL repair, reinjury, and subsequent rerepair prior to service, the date of the most recent surgery is used. Among those with a history of knee surgery, most EPTS discharges were related to injuries that occurred more than 3 years prior to symptoms, regardless of whether the injuries were to the ACL or to the meniscus.

TABLE 1.15 TIME FROM SURGERY TO REPAIR THE INJURIES LISTED TO PRESENTATION WITH SYMPTOMS DURING BASIC TRAINING BY PRESENCE OF HISTORY OF SURGERY

Time since surgery (history of knee surgery)	ACL Injuries		Meniscus Injuries	
	Count (n= 17)	Percent	Count (n= 12)	Percent
≤ 1 year	2	11.8	4	33.3
1- 1.9 years	3	17.6	1	8.3
2- 2.9 years	2	11.8	0	0
≥ 3 years	9	52.9	6	50
Unknown	1	5.9	1	8.3
Time since injury (no history of knee surgery)	**Count (n= 10)**	**Percent**	**Count (n= 4)**	**Percent**
≤ 1 year	3	30	0	0
1- 1.9 years	0	0	0	0
2-2.9 years	2	20	0	0
≥ 3 years	1	10	0	0
Unknown	4	40	4	100

It can be difficult to assign an EPTS category in many cases, and the official EPTS code assigned to each recruit often was not congruent with the data available in their medical records. Table 1.16 is a comparison of the official EPTS category assigned each recruit, and the category deemed appropriate based on review of the recruit's medical records. None of the patients who received a waiver only for another medical condition are classified as "Condition Waivered" in Table 1.16 (officially or after review of medical records). Interestingly, the waiver data is highly incongruent. Page 3 of DD form 2808, which is part of the MEPS medical screening paperwork, contains a section which indicates if any waivers were granted. Inspection of this section was used to determine whether or not each recruit received a waiver. In 9 cases the recruit's official EPTS category was "Condition Waivered", but no evidence of a granted waiver was found in the MEPS paperwork. The converse was true in only 1 case.

Five cases from Table 1.16 were a reclassification from the category "Medical Judgment" to "Concealed History". It is important to note that in 2 of these cases, as well as the one which was reclassified from "Condition Waivered" to a "Concealed History", the recruits in question injured or reinjured their knee between the MEPS screening and starting basic training, but did not disclose it upon arrival.

None of the cases were officially classified as a category "MEPS Error", but 2 were felt to be so after inspection of their medical records. Both were officially classified as "Condition Waivered", but no evidence of a waiver was included on DD form 2808. In one case the MEPS physician noted knee instability on physical exam, and a note from his civilian orthopedist indicated that he had an uncorrected ACL tear. In the other case, the MEPS physician's note stated that the recruit's knee "is still prone to giving way if he jumps". An orthopedic surgery consult was obtained, and he was later cleared for training.

TABLE 1.16 COMPARISON OF OFFICIAL EPTS CATEGORY ASSIGNED EACH RECRUIT, AND THE CATEGORY ASSIGNED BY REVIEW OF HIS/HER MEDICAL RECORDS

Official EPTS Category	EPTS Category from Review of Medical Records						
		Applicant Unaware	Medical Judgment	MEPS Error	Concealed History	Condition Waivered	Insufficient Data	
	Applicant Unaware	1						1
	Medical Judgment		6		5	1		12
	MEPS Error							0
	Concealed History	2	1		15			18
	Condition Waivered		6	2	1	3		12
	Insufficient Data						2	2
		3	13	2	21	4	2	n=45

Table 1.17 shows the waiver types recorded among individuals with an EPTS discharge for knee derangement. Most individuals (26.7%) were categorized as "Condition Waivered" in the EPTS discharge record. However, some individuals were waivered for conditions unrelated to the knee derangement that precipitated the EPTS discharge.

TABLE 1.17 TYPES OF WAIVERS RECORDED AMONG 2006 EPTS DISCHARGES

Type of Waiver Recorded	EPTS discharges (n= 45)	
	Count	Percent
Official Category "Condition Waivered"	12	26.7
Category "Condition Waivered" from Records	4	8.9
Waiver for Other Reasons	3	6.7
Waiver for Knee and Other Reasons Found in Records	1	2.2

Conclusions

The preceding study presented described the population of EPTS discharges for internal knee derangement in 2006. EPTS discharges for internal knee derangement varied by service, with Army and Marines representing the highest proportion of the EPTS discharges. A trend of increasing discharges for knee derangement with increasing age was observed. Most injuries that resulted in a later EPTS discharge were injuries to the ACL that occurred more than two years following an injury to the knee. Only 50% of cases were given the same EPTS category when comparing the results of a medical record review to the EPTS record. However, it is important to note that only one category can be indicated in an EPTS record and the categories of EPTS discharge are not necessarily mutually exclusive; an applicant could be cleared medically while simultaneously concealing portions of his/her medical history.

Several factors limit the interpretation of the results of this study. First, the reporting of EPTS discharges is not standardized. Each training site reports its own EPTS discharges and documentation is often poor with many variables missing. Further the amount of information contained within each discharge record varied widely based on training site. Second, reporting of EPTS discharges to MEPCOM is not mandatory, and the population studied may not include all discharges for knee derangement in 2006. Thus, the study population may not be representative of the population of EPTS discharges for knee derangement. Notwithstanding these limitations, this study provides insight into EPTS discharges for knee derangement and provides a basis for future studies.

References

1. Rifat S, Ruffin M, Gorenflo D. Disqualifying criteria in preparticipation sports evaluation. *J Fam Practice*. 1995; 41: 42-52.

Description of DoDMERB Applicant Population: 2004-2005

Background

The Department of Defense Medical Examination Review Board (DoDMERB) is tasked with the scheduling, evaluating, and certifying medical qualification for the applicants to the US Service Academies, the Service Reserve Officer Training Corps (ROTC) programs, and the Uniformed Services University of the Health Sciences (USUHS). Prior to DoDMERB's inception, multiple medical examinations were performed for each agency to which an applicant applied. DoDMERB was established to eliminate duplicate examinations by performing only one examination per applicant regardless of the number of agencies to which he/she applies. DoDMERB utilizes contract services and Military Medical Treatment Facilities (MTFs) to conduct the initial medical examinations which are used to determine medical eligibility for enrollment in service academies, ROTC, and USUHS.[1] The purpose of this study is to characterize the DoDMERB applicant and describe disqualifying medical conditions that were most predominant in the applicant population between 2004 and 2005.

Methods

A number of factors are used to evaluate applicants to the Service Academics, who then use various formulas to make a determination of the academic potential of the individual. Requests for medical examinations by DoDMERB are made only when a determination of good academic potential has been made by the service academies. Therefore, only applicants who met academic qualifications are included in the study population.

Data were acquired from the eleven DoDMERB agencies and merged into one dataset for each cycle year. These data contained information on the disqualifications and requests for additional testing associated with each applicant in addition to demographic variables and social security numbers (SSN). For purposes of this study, all applicants who received a medical examination in cycle year 2004 or 2005 were included.

Height and weight were used as a proxy for the presence of a medical exam in the applicable cycle year (i.e. 2004 or 2005). If an applicant was missing height or weight, it was assumed that he/she did not receive a medical examination in the applicable cycle year and the applicant was excluded from analyses. Height and weight are present for all individuals who received a medical exam in the applicable cycle year regardless of whether or not the applicant was disqualified. However, it is possible that applicants who did not receive a medical examination went on to matriculate using a medical examination conducted as part of an earlier cycle year. Cycle years differ from calendar years as they are based on the academic calendar. Thus, the 2004 cycle year includes applicants who applied for matriculation in the 2005-2006 school year. Similarly, the 2005 cycle year includes applicants who applied for matriculation in the 2006-2007 school year.

Data were analyzed in two different ways: by application and by applicant. Analyses presented by application included all applications. Thus, an applicant may appear multiple times if he/she

[1] Department of Defense Medical Examination Review Board. 2007 Annual Report. https://dodmerb.tricare.osd.mil. Accessed 29 February 2008.

applied to multiple agencies. Conversely, analyses presented by applicant include each applicant only once regardless of the number of applications submitted. Social Security Numbers (SSNs) were used as unique identifiers; only one record was used for individuals with SSNs appearing more than once. In cases where an individual was disqualified at least once, he/she was included in the analyses of disqualification, despite the fact he/she could have been subsequently accepted to another agency following the initial disqualification.

Results

Table 1.18 shows the demographic characteristics of DoDMERB applicants for 2004 and 2005. In both years, most applicants were white, male, and between the ages of 17 and 19. Small demographic differences are observable when comparing 2005 applicants to 2004 applicants. A smaller percentage of 2005 applicants were in the 17-19 age group in 2005 (78.6% vs. 82.0%) and a larger percentage of applicants were 20-22 (13.7% vs. 11.8%). In addition, fewer applicants in 2005 were white (67.6% vs. 72.5%) though an increase in the percentage of applicants with unknown race accompanied this increase (11.6% vs. 7.3%).

TABLE 1.18 DEMOGRAPHIC CHARACTERISTICS OF DODMERB APPLICANTS: CYCLE YEARS 2004-2005

Condition	2004 Applicants		2005 Applicants	
	Count*	Percent	Count*	Percent
Age				
17-19 years	20,050	82.0	19,885	78.6
20-22 years	2,886	11.8	3,468	13.7
> 23 years	1,507	6.2	1,957	7.7
Gender				
Male	19,548	80.0	20,086	79.4
Female	4,896	20.0	5,224	20.6
Race				
White	17,728	72.5	17,100	67.6
Black	1,769	7.2	1,909	7.5
Other	3,183	13.0	3,371	13.3
Unknown	1,764	7.3	2,930	11.6
Total Applicants	24,444	100	25,310	100

* Total counts by variable may differ from the total applicants due to missing data

The distribution of applicants by agency for the period from 2004 to 2005 is shown in Table 1.19. In 2005, the highest number of applications was received by the Army College Scholarship Branch (CSB), which accounted for 27.2% of total applicants. The agency with the second highest number of applicants was the Military Academy (14.7%), followed by the Air Force Academy (13.1%), Naval Academy (12.7%), and the Army ROTC (11.0%). Slight variations are observable when comparing the distribution of applications by agency in 2004 to that in 2005. Though the Naval Academy ranked fourth in terms of number of applicants in 2005, it surpassed the Military Academy as the second most frequently applied to agency in 2004.

TABLE 1.19 DISTRIBUTION OF APPLICATIONS BY AGENCY: CYCLE YEARS 2004-2005

Condition	2004 Applications		2005 Applications	
	Count	Percent	Count	Percent
Army CSB	7,771	22.3	9,276	27.2
Military Academy	5,292	15.2	5,016	14.7
Air Force Academy	4,560	13.1	4,465	13.1
Naval Academy	6,181	17.8	4,321	12.7
Army ROTC	4,145	11.9	3,738	11.0
Coast Guard Academy	924	2.7	1,870	5.5
Navy ROTC	1,841	5.3	1,822	5.3
Air Force ROTC	1,985	5.7	1,582	4.6
Merchant Marine Academy	1,338	3.9	1,256	3.7
USUHS	483	1.4	486	1.4
Marine Corps ROTC	278	0.8	270	0.8
Total Applications	34,798	100	34,102	100

Table 1.20 shows the distribution of applications per applicant, comparing the 2004 applicant population to the 2005 applicants. In 2005, 78.5% of applicants submitted only one application, which is significantly higher than the percent of applicants who submitted only one application in 2004 (74.3%). The percentage of applicants submitting more than one application decreased with each increase in number of applications per applicant. This same pattern of decreasing number of applications was observable in 2004. The number of average applications per person decreased from 1.42 in 2004 to 1.35 in 2005. However, a larger proportion of applicants submitted more than one application in 2004 relative to 2005 with the largest differences apparent in the 2-4 applications per applicant categories.

TABLE 1.20 DISTRIBUTION OF APPLICATIONS PER APPLICANT: CYCLE YEARS 2004-2005

Applications/Applicant	2004 Applicants		2005 Applicants	
	Count	Percent	Count	Percent
1	18,168	74.3	19,875	78.5
2	3,703	15.1	3,349	13.2
3	1,559	6.4	1,221	4.8
4	666	2.7	564	2.2
5	240	1.0	219	0.9
6	76	0.3	61	0.2
7	29	0.1	19	0.1
8	3	0.01	2	0.01
Average	1.42	-	1.35	-
Total Applicants	24,444	100	25,310	100

The codes most frequently utilized by DoDMERB to describe disqualifying medical conditions are shown in Table 1.21 accompanied by a description of each code. Each record of medical disqualification can have up to five diagnostic codes, though the presence of one code is disqualifying.

TABLE 1.21 MOST FREQUENTLY UTILIZED DODMERB CODES WITH DESCRIPTIONS

Code	Title	Description
D004.00	Orthodontic appliances	Orthodontic applicances
D102.60	Blood pressure	Blood pressure exceeding standards
D111.10	Atopic dermatitis/Eczema	History of atopic dermatitis or eczema
D122.30	Hearing loss	Hearing loss exceeding medical accession standards
D141.50	Allergic manifestations	Reliable history of significant allergic manifestations
D152.20	Eye surgery	Keratorefractive/laser surgery/appliance to reconfigure cornea
D155.40	Distant visual acuity	Distant visual acuity that does not correct to an acceptable standard
D155.41	Distant visual acuity (20/20)	Distant visual acuity not correctable to 20/20 in each eye
D155.42	Distant visual acuity (20/400)	Unaided distant visual acuity greater than 20/400
D155.70	Myopia (-8.00)	Myopia-refractive error greater than -8.00 diopters.
D155.71	Myopia (-6.00)	Myopia-refractive error greater than -6.00 diopters.
D156.10	Color vision deficiency	Color vision deficiency
D223.20	Pes planus	Pes planus
D223.80	ACL/PCL injury	History of uncorrected anterior or posterior cruciate ligament injury
D224.60	Disease/chronic pain of lower extremities	Disease/chronic pain: lower extremity(ies) that hinders active lifestyle
D231.10	Mood disorders	History of a mood disorder
D231.90	Academic skills defects	Academic skills defects
D241.30	Asthma	Asthma/reactive airway disease/exercise induced bronchospasm

Table 1.22 shows the top ten diagnoses cited for applicant disqualification in 2004 and 2005. Though only one disqualification was used per applicant, up to five diagnostic codes can be indicated per disqualification. Thus, the total number of disqualifications is greater than the total number of applicants disqualified.

In both 2004 and 2005, asthma was the leading diagnosis cited for disqualification, comprising 12.9% and 11.7% of all disqualifying conditions . Similarly, atopic dermatitis and eczema was the second leading diagnosis resulting in applicant disqualification in 2004 and 2005 making up 5.5% and 5.4% respectively. Two visual deficiencies were the third and fourth leading causes of applicant disqualification in both 2004 and 2005. Myopia was the third leading diagnosis resulting in applicant disqualification in 2004 and 2005 accounting for 3.7% in 2004 and 3.8% in 2005.

TABLE 1.22 TOP 10* DIAGNOSES CITED FOR APPLICANT DISQUALIFICATION: CYCLE YEARS 2004-2005

Condition	2004		2005	
	Count	Percent	Count	Percent
Asthma	933	12.9	851	11.7
Atopic dermatitis/eczema	401	5.5	394	5.4
Myopia (-8.00)	267	3.7	276	3.8
Distant visual acuity	199	2.8	224	3.1
ACL/PCL injury	156	2.2	206	2.8
Hearing loss	173	2.4	205	2.8
Mood disorders	230	3.2	204	2.8
Allergic manifestations	171	2.4	204	2.8
Disease/chronic pain of lower extremities	142	2.0	198	2.7
Academic skills defects	188	2.6	194	2.7
All Other Disqualifications	4,375	60.5	4,345	59.5
Total Disqualifications	7,235	100	7,301	100
Total Applicants Disqualified	6,069	-	5,921	-

*Note that up to five diagnosis codes can be used per applicant. All diagnosis codes were used to create this table. Thus, an applicant may be represented more than once in this table within different diagnoses.

Table 1.23 shows the distribution of the number of academies/scholarship programs that disqualified each applicant for 2004 and 2005. Applicants were most frequently disqualified from only one agency. Approximately 63% of 2005 applicants had one disqualification as compared to the roughly 56% who had one disqualification in 2004. Applicants without a disqualification made up the second largest category in 2005 constituting 21% of applicants; a significantly higher percentage of applicants with no disqualifications was observed in 2004 (25.1%). However, the average disqualifications per person were similar for 2004 and 2005. Roughly 16% of applicants had more than one disqualification in 2005 as compared to approximately 19% of 2004 applicants who had more than one disqualification.

TABLE 1.23 NUMBER OF AGENCY DISQUALIFICATIONS PER APPLICANT: CYCLE YEARS 2004-2005

Agency Disqualifications/Applicant	2004		2005	
	Count	Percent	Count	Percent
0	6,134	25.1	5,294	20.9
1	13,670	55.9	15,895	62.8
2	2,813	11.5	2,566	10.1
3	1,133	4.6	923	3.7
4	460	1.9	410	1.6
5	162	0.7	162	0.6
6	52	0.2	45	0.2
7	18	0.1	14	0.1
8	2	0.01	1	0.01
Average disqualifications/applicant	1.06	-	1.05	-
Total Applicants Disqualified	24,444	100	25,310	100

Tables 1.24 through 1.28 show the leading disqualifications for the academies. Asthma was the leading disqualifying condition in 2004 and 2005 for all academies. The second and third leading conditions which resulted in medical disqualification from the academies were varied. With the exception of the Military Academy, where the second leading cause of disqualification was atopic dermatitis, the second leading causes of disqualification were various deficiencies related to vision across all academies.

TABLE 1.24 LEADING DISQUALIFICATIONS CYCLE YEARS 2004-2005: MILITARY ACADEMY

Condition	2004		2005	
	Count	Percent	Count	Percent
Asthma	285	18.4	285	18.4
Atopic dermatitis/eczema	101	6.5	101	6.5
Myopia (-8.00)	62	4.0	62	4.0
Pes planus	34	2.2	34	2.2
Allergic manifestations	61	3.9	61	3.9
All other	1,008	65.0	1,008	65.0
Total disqualifications	1,551	100	1,551	100
Total applicants disqualified	1,327		1,327	

TABLE 1.25 LEADING DISQUALIFICATIONS CYCLE YEARS 2004-2005: NAVAL ACADEMY

Condition	2004		2005	
	Count	Percent	Count	Percent
Asthma	267	14.4	161	12.4
Myopia (-6.00)	163	8.8	110	8.5
Atopic dermatitis/eczema	106	5.7	91	7.0
Distant visual acuity (20/20)	104	5.6	67	5.2
Color vision deficiency	67	3.6	63	4.8
All other	1,150	61.9	807	62.1
Total disqualifications	1,857	100	1,299	100
Total applicants disqualified	1,611		1,006	

TABLE 1.26 LEADING DISQUALIFICATIONS CYCLE YEARS 2004-2005: MERCHANT MARINE ACADEMY

Condition	2004		2005	
	Count	Percent	Count	Percent
Asthma	58	12.5	60	13.8
Distant visual acuity (20/400)	51	11.0	41	9.4
Myopia (-6.00)	28	6.0	35	8.0
Distant visual acuity (20/20)	29	6.3	30	6.9
Atopic dermatitis/eczema	30	6.5	25	5.7
All other	268	57.8	245	56.2
Total disqualifications	464	100	436	100
Total applicants disqualified	361		309	

TABLE 1.27 LEADING DISQUALIFICATIONS CYCLE YEARS 2004-2005: AIR FORCE ACADEMY

Condition	2004		2005	
	Count	Percent	Count	Percent
Asthma	204	16.1	180	13.7
Color vision deficiency	118	9.3	131	10.0
Atopic dermatitis/eczema	79	6.2	95	7.2
ACL/PCL injury	43	3.4	46	3.5
Disease/chronic pain of lower extremities	21	1.7	42	3.2
All other	804	63.4	821	62.4
Total disqualifications	1,269	100	1,315	100
Total applicants disqualified	1,070		994	

TABLE 1.28 LEADING DISQUALIFICATIONS CYCLE YEARS 2004-2005: COAST GUARD ACADEMY

Condition	2004		2005	
	Count	Percent	Count	Percent
Asthma	39	13.7	76	13.3
Distant visual acuity (20/400)	36	12.7	61	10.7
Distant visual acuity (20/20)	15	5.3	29	5.1
Atopic dermatitis/eczema	18	6.3	24	4.2
Academic skills defects	5	1.8	23	4.0
All other	171	60.2	357	62.6
Total disqualifications	284	100	570	100
Total applicants disqualified	225		420	

Leading disqualifications for the ROTC programs are shown in Tables 1.29 through 1.32 for 2004 and 2005. Similar to the academies, asthma was the leading disqualifying condition in all ROTC programs. Various visual deficiencies were the second leading cause of disqualification one of the leading causes of disqualification in all ROTC programs with the exception of the Army ROTC where the second leading cause of disqualification was atopic dermatitis.

TABLE 1.29 LEADING DISQUALIFICATIONS CYCLE YEARS 2004-2005: AIR FORCE ROTC

Condition	2004		2005	
	Count	Percent	Count	Percent
Asthma	175	13.5	127	10.2
Atopic dermatitis/eczema	99	7.6	80	6.4
Distant visual acuity	37	2.8	60	4.8
Myopia (-8.00)	57	4.4	53	4.2
Allergic manifestations	41	3.2	48	3.8
All other	890	68.5	880	70.5
Total disqualifications	1,299	100	1,248	100
Total applicants disqualified	972		902	

TABLE 1.30 LEADING DISQUALIFICATIONS CYCLE YEARS 2004-2005: NAVY ROTC

Condition	2004		2005	
	Count	Percent	Count	Percent
Asthma	91	12.6	107	16.0
Myopia (-6.00)	71	9.8	59	8.8
Atopic dermatitis/eczema	48	6.6	41	6.1
Distant visual acuity (20/20)	24	3.3	31	4.6
Pes planus	21	2.9	23	3.4
All other	470	64.8	406	60.9
Total disqualifications	725	100	667	100
Total applicants disqualified	526		479	

TABLE 1.31 LEADING DISQUALIFICATIONS CYCLE YEARS 2004-2005: MARINE CORPS ROTC

Condition	2004		2005	
	Count	Percent	Count	Percent
Asthma	9	11.3	8	12.7
Myopia (-6.00)	12	15.0	7	11.1
Orthodontic appliances	1	1.3	4	6.3
Allergic manifestations	1	1.3	4	6.3
Distant visual acuity (20/20)	2	2.6	4	6.3
All other	55	68.8	36	57.1
Total disqualifications	80	100	63	100
Total applicants disqualified	63		49	

TABLE 1.32 LEADING DISQUALIFICATIONS CYCLE YEARS 2004-2005: AIR FORCE ROTC

Condition	2004		2005	
	Count	Percent	Count	Percent
Asthma	97	14.9	68	14.8
Color vision deficiency	61	9.4	41	8.9
Atopic dermatitis/eczema	56	8.6	31	6.7
Pes planus	17	2.6	19	4.1
Myopia (-8.00)	17	2.6	18	3.9
All other	401	61.8	283	61.5
Total disqualifications	649	100	460	100
Total applicants disqualified	475		345	

Table 1.33 shows the leading disqualifications for the Army CSB program. Medical disqualifications from this program closely resemble the leading disqualification from both the Military Academy and the Army ROTC. Asthma is the leading cause of disqualification followed by atopic dermatitis and various visual deficiencies.

TABLE 1.33 LEADING DISQUALIFICATIONS CYCLE YEARS 2004-2005: ARMY CSB

Condition	2004		2005	
	Count	Percent	Count	Percent
Asthma	157	7.6	167	7.4
Myopia (-8.00)	121	5.8	123	5.4
Distant visual acuity	117	5.7	121	5.4
Hearing loss	88	4.3	109	4.8
Astigmatism	76	3.7	96	4.2
All other	1,500	72.9	1,643	72.7
Total disqualifications	2,059	100	2,259	100
Total applicants disqualified	1,763		1,688	

Table 1.34 shows the leading medical disqualifications among applicants disqualified from the Uniformed Services University of Health Sciences (USUHS). The leading condition resulting in applicant disqualification was atopic dermatitis in both 2005 and 2004. Myopia greater than -8.00 diopters accounted for the same proportion of disqualifications in the applicant population in 2005 as the other leading condition, atopic dermatitis, though the percent of disqualifications for myopia was higher in 2005 relative to 2004. The third leading condition resulting in disqualification in 2005 was hypertensive vascular disease, which accounted for a much higher proportion of disqualifications in 2005 than in 2004. However, given the relatively small numbers of disqualifications among applicants disqualified from USUHS. It is difficult to determine whether differences observed between 2004 and 2005 are random fluctuations or whether these differences are indicative of a change in the applicant pool.

TABLE 1.34 LEADING DISQUALIFICATIONS CYCLE YEARS 2004-2005: UNIFORMED SERVICES UNIVERSITY OF HEALTH SCIENCES

Condition	2004		2005	
	Count	Percent	Count	Percent
Atopic dermatitis/eczema	13	8.2	12	9.9
Myopia (-8.00)	9	5.7	12	9.9
Blood pressure	1	0.6	8	6.6
Asthma	8	5.0	7	5.8
Eye surgery	16	10.1	5	4.1
All other	112	70.4	77	63.6
Total disqualifications	159	100	121	100
Total applicants disqualified	159		110	

Conclusions

The leading conditions which resulted in applicant disqualification are fairly consistent when comparing across DoDMERB agencies. Disqualifications for asthma were the most common across all agencies, with the exception of USUHS. Further, atopic dermatitis and visual deficiencies were also among the leading causes of applicant disqualification across all agencies. These findings were consistent with the overall rates of disqualification without stratification by agency.

Medical disqualifications among the DoDMERB applicant pool differ from the medical disqualifications observed among the enlisted population. While asthma, visual deficiencies, and atopic dermatitis were the leading causes of medical disqualification among DoDMERB applications, among enlisted applicants the leading causes of disqualification were overweight, drugs, and visual refraction (see "Medical Disqualifications among Applicants for First Time Active Duty Enlisted Service"). In the period between 2002 and 2005, asthma ranked sixth among medical disqualifications for enlisted personnel while atopic dermatitis ranked 15th. These data indicate that the medical profile of DoDMERB applicants is different than the medical profile of enlisted personnel. However, direct comparisons between the DoDMERB applicant population's disqualifications and the enlisted applicant population's disqualifications cannot be made due to differences in disqualification coding utilized by DoDMERB and MEPCOM. Thus, the comparisons drawn in between the two applicant populations are intended to be qualitative rather than quantitative.

Deployment and Accession Medical Waivers

Introduction

The ability of the United States Armed Forces to respond quickly to emerging threats relies, in part, on the long-term maintenance of a deployment-ready force. Physical fitness is one key aspect of deployment readiness and it is under great scrutiny from enlistment, appointment, induction, and retention. At application, potential recruits receive a comprehensive physical examination at MEPS. Individuals identified during the MEPS physical as possibly having current disqualifying conditions such as asthma or various orthopedic conditions must be evaluated by service specific waiver authorities for their suitability for active duty service. Previous work by AMSARA [1] has shown that individuals requiring an accession medical waiver (all conditions considered without distinction) for enlistment into active duty service have a higher rate of attrition at one, two, and three years following accession compared to recruits who did not require a waiver. However, later studies demonstrated that not all disqualifying conditions are associated with higher rates of attrition relative fully qualified recruits. For example, individuals granted waivers for hearing deficiencies [2], knee injuries [3], and scoliosis [4] have higher rates of early attrition from military service while individuals granted waivers for chronic headaches [5], myopia [6], ADHD [7], knee/shoulder instability [8], and asthma [9] have similar rates of attrition as observed for fully qualified recruits.

In order to determine if waiver status exerted an influence on the deployment readiness of enlistees who did not attrit, the following descriptive analysis was conducted as part of a larger study to determine if a history significant for a medical accession waiver was associated with lower one- and two-year deployment rates, increased time to deployment, and reduced deployment duration.

Methods

Study group

Subjects were selected from the DMDC (gain/loss) dataset maintained by AMSARA and were included in the study if they had an accession record for CY 2003 through CY 2005 in addition to a corresponding MEPCOM record (MEPS physical exam). Individuals who were not first-time, active duty enlistees who applied to the Army, Navy, Marines, or Air Force were excluded from the study. The limited number of females considered for various accession medical waivers in the four services required the further exclusion of all female subjects.

Deployment and waiver status

Deployment status was determined by matching subjects by SSN to the DMDC deployment dataset. Multiple deployments were common. However, for this study only the first deployment, occurring in the first one or two years following accession, was examined. Additionally, only deployments that took place before a recorded end of service data were considered since deployments occurring after this date may reflect activity under a later enlistment.

From the final group of individuals selected for the study, waiver status was determined by matching individuals by SSN to records in the accession medical waiver database. If there was no evidence in the MEPS record to suggest the presence of a disqualifying medical condition or a corresponding record in the waiver dataset, an individual's waiver status was considered "Fully qualified". If an individual had an accession medical waiver, their waiver status was determined by the ICD-9 (Army and Air Force) or DoDI code (Navy and Marines) noted in their

waiver record. ICD-9/DoDI codes 290 – 319, V65.4, and V40 signified the potential presence of a mental health disorder. ICD-9/DoDI codes 710 – 739, 754 – 756, 800 – 839, 885 – 887. 895, 896, 905, 922 – 924, P76 - P84, V43.6, V43.7, V49.6, V49.7, V53.7, and V54 indicated orthopedic conditions. Waivers for suspected asthma were indicated by an ICD-9/ DoDI code of 493. All other ICD-9/ DoDI codes were grouped into the heterogeneous category, "Other". Individuals possessing multiple conditions spanning more than one waiver category were classified as having multiple waivers. Using the combined information in the MEPS, gain/loss, waiver, and deployment datasets, one- and two-year deployment rates, time to deployment, and duration of deployment were calculated for fully qualified recruits as well as those requiring a medical accession waiver.

Results

Demographic characteristics of study subjects

The distribution of race, AFQT score, and education were generally similar between the fully qualified and waived groups (Table 1.35). However, the proportion of white subjects tended to be slightly higher in all services for the waived group. In addition, the proportion of individuals with a Bachelor's-level education or higher tended to account for a slightly lower proportion of fully qualified accessions as compared to those evaluated for a medical accession waiver. A similar observation was made for AFQT score in which the highest percentile group made up a larger proportion of recruits considered for an accession medical waiver than for fully qualified accessions. The largest difference between the fully qualified group and that which was evaluated for a medical accession waiver was in the distribution of age. Among fully qualified accessions, 17 to 20-year olds accounted for 63% (Army), 73% (Navy), 84% (Marines), and 72% (Air Force) of the sample. However, among individuals evaluated for an accession medical waiver, 17 to 20-year olds only account for 54% (Army), 65% (Navy), 79% (Marines), and 70% (Air Force) of the sample.

Historically, the proportion of applicants evaluated for a medical waiver was usually between 5% and 6% for the Army, Navy, and Marines. The proportion of Air Force applicants noted as having a disqualifying medical condition was lower (2.7 to 4.4%) than the other three services (data not shown).

TABLE 1.35 DEMOGRAPHIC CHARACTERISTICS OF FULLY QUALIFIED AND SUBJECTS EVALUATED FOR A MEDICAL ACCESSION WAIVER

Branch of Service:		Army				Navy				Marine				Air Force			
Qualification Status:		Fully Qualified		Waiver		Fully Qualified		Waiver		Fully Qualified		Waiver		Fully Qualified		Waiver	
Demographic Characteristic		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Race	Black	11,136	11.5	817	10.1	15,235	19.2	788	14.7	6,146	7.9	322	7.2	8,541	14.2	265	11.9
	White	63,235	65.3	5,724	70.9	49,941	62.8	3,654	68.3	61,464	78.7	3,595	80.3	44,556	74.0	1,723	77.1
	Other	6,208	6.4	553	6.9	12,253	15.4	759	14.2	5,356	6.9	291	6.5	5,713	9.5	202	9.0
	Declined	16,245	16.8	969	12.0	2,085	2.6	143	2.7	5,002	6.4	253	5.7	1,358	2.3	46	2.1
	Missing	26	0.0	9	0.1	30	0.0	4	0.1	160	0.2	15	0.3	29	0.0	0	0.0
Age Group	17 - 20	61,169	63.2	4,372	54.2	58,249	73.2	3,459	64.7	65,478	83.8	3,541	79.1	43,423	72.1	1,573	70.3
	21 - 25	27,053	27.9	2,662	33.0	17,048	21.4	1,447	27.1	11,395	14.6	826	18.5	15,119	25.1	582	26.0
	26 - 30	6,476	6.7	792	9.8	3,241	4.1	333	6.2	1,198	1.5	107	2.4	1,598	2.7	81	3.6
	> 30	2,152	2.2	246	3.0	1,004	1.3	109	2.0	36	0.0	2	0.0	57	0.1	0	0.0
	Missing	0	0.0	0	0.0	2	0.0	0	0.0	21	0.0	0	0.0	0	0.0	0	0.0
AFQT Score	1 - 29	7,422	7.7	473	5.9	3,857	4.8	194	3.6	4,436	5.7	216	4.8	685	1.1	18	0.8
	30 - 49	24,291	25.1	1,957	24.2	22,560	28.4	1,330	24.9	21,168	27.1	1,125	25.1	10,999	18.3	387	17.3
	50 - 64	24,229	25.0	2,001	24.8	18,877	23.7	1,252	23.4	19,769	25.3	1,115	24.9	16,051	26.7	587	26.3
	65 - 92	34,286	35.4	2,929	36.3	28,816	36.2	2,088	39.0	28,363	36.3	1,735	38.8	27,225	45.2	1,059	47.4
	93 - 99	6,598	6.8	712	8.8	5,303	6.7	484	9.1	3,828	4.9	285	6.4	4,652	7.7	184	8.2
	Missing	24	0.0	0	0.0	131	0.2	0	0.0	564	0.7	0	0.0	585	1.0	1	0.0
Education	< HS Senior	772	0.8	63	0.8	1,611	2.0	64	1.2	566	0.7	19	0.4	75	0.1	0	0.0
	HS Senior	3,141	3.2	232	2.9	123	0.2	6	0.1	2,093	2.7	110	2.5	337	0.6	15	0.7
	HS diploma	84,229	87.0	6,839	84.7	72,891	91.6	4,820	90.1	73,682	94.3	4,197	93.8	57,877	96.1	2,162	96.7
	Some college	4,283	4.4	382	4.7	2,967	3.7	243	4.5	1,265	1.6	97	2.2	552	0.9	22	1.0
	Bachelor's	4,217	4.4	550	6.8	1,835	2.3	210	3.9	498	0.6	51	1.1	1,288	2.1	35	1.6
	Unknown	208	0.2	6	0.1	117	0.1	5	0.1	24	0.0	2	0.0	68	0.1	2	0.1

Deployment

Table 1.36 specifies the one- and two-year deployment rates for fully qualified and waiver approved enlistees. Within the first year of active duty service, overall, about 18% (Army), about 12% (Navy and Marines), and about 5% (Air Force) of fully qualified were deployed. Typically, the proportion of individuals deployed in the waived groups was similar to the fully qualified group. The major exception was observed for Air Force recruits evaluated for an asthma accession medical waiver. One year-deployment for this group was 8%, compared to 5% for fully qualified. The lowest 1-year deployment rates were for orthopedic waivers in the Army (15%), psychiatric waivers in the Navy (11%) and Marines (10%), and individuals requiring multiple waivers in the Air Force (2%).

By the end of the second service year, the proportion deployed was generally similar between the waiver status categories. The only substantially (and significantly ($p<0.01$)) lower category was Army orthopedic waivered individuals. Historically, the proportion of applicants evaluated for a medical waiver was usually finding was for Army Orthopedic waivers. The 2-year deployment for recruits with waivers for orthopedic conditions was 37% while the same proportion for all other waiver categories in the Army ranged from 43% (Other) to 46% (Fully qualified).

TABLE 1.36. DEPLOYMENT WITHIN ONE AND TWO YEARS OF ACCESSION[†] FOR FIRST-TIME, ACTIVE DUTY ENLISTEES: BY SERVICE AND WAIVER STATUS

Service	Waiver status	1-year deployment[‡]		2-year deployment[§]	
		2003 - 2005 accessions	Rate	2003 - 2004 accessions	Rate
Army	Fully qualified	108,013	18.3	76,347	45.6
	Asthma	592	16.6	541	44.7
	Ortho	1,728	14.9	1,224	37.3
	Psych	783	18.6	589	44.5
	Other	4,636	17.2	3,292	42.9
	Multi	300	16.7	233	45.5
Navy	Fully qualified	87,005	11.8	60,614	27.4
	Asthma	408	11.0	311	25.1
	Ortho	1,263	11.2	821	25.8
	Psych	399	10.5	295	25.4
	Other	2,914	10.6	1,936	26.7
	Multi	152	12.5	86	23.3
Marines	Fully qualified	85,419	11.9	58,619	42.3
	Asthma	391	12.5	308	42.5
	Ortho	1,006	10.3	632	40.2
	Psych	525	9.7	376	40.7
	Other	2,118	10.0	1,289	36.7
	Multi	359	12.3	215	44.7
Air Force	Fully qualified	65,004	4.7	47,668	21.3
	Asthma	111	8.1	101	18.8
	Ortho	303	5.3	257	19.5
	Psych	262	5.0	222	19.8
	Other	942	5.0	824	21.0
	Multi	47	2.1	45	24.4

[†] Accession required to be less than loss date and deployment date

[‡] The denominator for this rate is the total number of accessions in 2003 – 2005

[§] The denominator for this rate is the total number of accessions in 2003 and 2004

Time to deployment among the waiver status categories is summarized in Table 1.37. No major differences in the time to deployment were observed among the different waiver categories within each service. The median time to deployment among those individuals deployed within one year of accession was also similar across services.

TABLE 1.37. TIME (IN DAYS) FROM ACCESSION TO INITIAL DEPLOYMENT FOR FIRST-TIME, ACTIVE DUTY ENLISTEES WHO ACCESSED[†] IN 2003 - 2005: BY SERVICE AND WAIVER STATUS

Service	Waiver status	Total[‡]	Time to deployment (days)		
			Median	Q1	Q3
Army	Fully qualified	19,756	263	211	316
	Asthma	98	264	206	319
	Ortho	258	264	212	315
	Psych	146	257	199	328
	Other	798	271	214	321
	Multi	50	246	202	312
Navy	Fully qualified	10,249	227	165	300
	Asthma	45	236	154	322
	Ortho	141	255	196	309
	Psych	42	210	164	279
	Other	310	213	152	294
	Multi	19	277	243	323
Marines	Fully qualified	10,134	300	257	334
	Asthma	49	301	275	335
	Ortho	104	314	270	344
	Psych	51	303	265	340
	Other	212	296	263	333
	Multi	44	311	278	328
Air Force	Fully qualified	3,043	302	259	338
	Asthma	9	312	226	354
	Ortho	16	301	254	347
	Psych	13	290	264	309
	Other	47	273	217	329
	Multi	1	267	267	267

[†] Accession required to be less than loss date and deployment date

[‡] Number of individuals among medical accession waiver categories within the study group who were not lost prior to 180 days

Discussion

The objective of this descriptive analysis was to develop a preliminary understanding of whether accession medical waivers granted for asthma, orthopedic, and psychiatric conditions were associated with lower deployment, greater time to deployment, or lower duration of deployment. From this preliminary analysis, it appears that waiver status, as defined previously, has only a minor impact on these facets of deployment readiness. Therefore, it would appear that the current accession procedures are adequate for the procurement and retention of a deployment-ready force. It is important to note, however, that the deployment outcomes discussed in this study have not yet been adjusted for the influence of covariates such as age, race, education, or AFQT score. In addition, other factors which heavily influence deployment and deployment duration, such as job category and unit assignment, have not been taken into consideration. Unfortunately, the small number of waivers in each category across services will make formal analysis of these latter factors challenging. However, the descriptive analysis presented here suggests that adjustment for demographics may not alter the estimated time to or rates of deployment. Furthermore, a preliminary investigation (underway as this report goes to press) suggests that waived individuals are not preferentially assigned to a particular unit within a service or to specific job categories. Future work on this project will involve the construction of a multivariable model, which will formally examine time to event (start or end of deployment) for the different waiver categories.

References

1. Attrition rate for enlistees waived for medical disqualification conditions. 2000 AMSARA Annual Report, p. 34.

2. Niebuhr DW, Li Y, Powers TE, *et al.* Attrition of U.S. military enlistees with waivers for hearing deficiency, 1995-2004. *Mil Med.* 2007;172(1):63-9.

3. Cox KA, Clark KL, Li Y, Powers TE, Krauss MR. Prior knee injury and risk of future hospitalization and discharge from military service. *Am J Prev Med.* 2000;18(3 Suppl):112-7.

4. Survival of recruits waived for scoliosis. 2003 AMSARA Annual Report, p. 9.

5. Niebuhr DW, Jankosky C, Powers TE, Krauss MR. Attrition of military enlistees with a medical waiver for chronic headache, 1995-2000. *Mil Med.* 2006;171(12):1235-8.

6. Niebuhr DW, Powers TE, Krauss MR, et al. Attrition of military enlistees with a medical waiver for myopia, 1999-2001. *Mil Med.* 2006;171(11):1137-41.

7. Krauss MR, Russell RK, Powers TE, Li Y. Accession standards for attention-deficit/hyperactivity disorder: a survival analysis of military recruits, 1995-2000. *Mil Med.* 2006;171(2):99-102.

8. Survival of new military recruits requiring medical waiver for knee or shoulder instability. 2006 AMSARA Annual Report, p. 8.

9. Clark KL, Li Y, Krauss MR, *et al.* The asthma accession standard: a survival analysis of military recruits, 1995 to 1997. *Mil Med.* 2000;165(11):852-4.

Description of Interservice Separation Codes Utilized among Servicemembers Discharged for Conditions Existing Prior to Service

Background

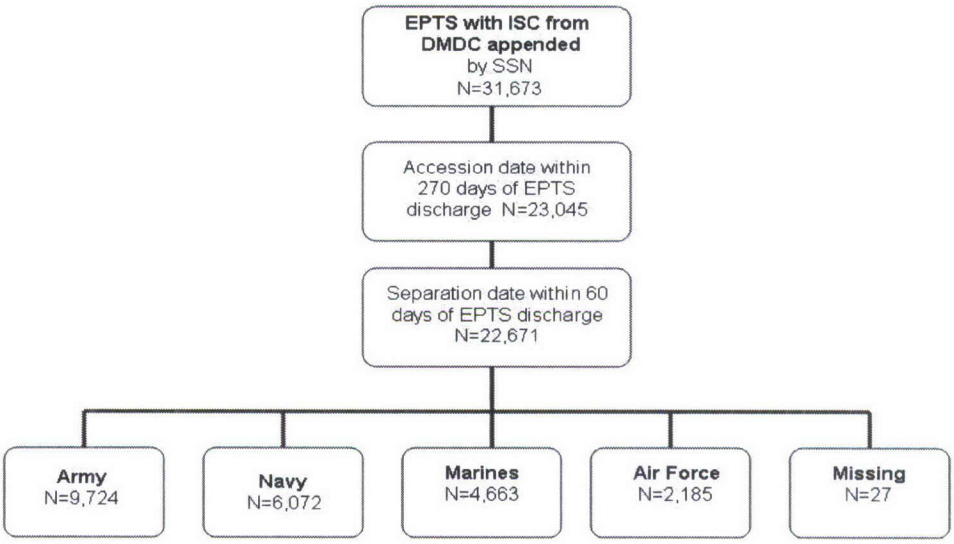
Discharges for conditions existing prior to service (EPTS) are classified as such when it can be confirmed that the medical condition existed prior to accession. These discharges occur within 180 days after the onset of active duty. Reporting of EPTS is done in all services, though such reporting varies by site and over time (See "Data Sources" for details). In addition to reporting EPTS discharges, each branch of service also reports an Interservice Separation Code (ISC), developed by Defense Manpower Data Center (DMDC) to enable meaningful cross service comparisons of separations. Unlike EPTS discharges, an ISC is not necessarily for a medical condition; all servicemembers who leave the military receive an ISC regardless of the circumstance surrounding separation. One of the ISC available to coders is a code, within the category of medical discharges, indicating discharges for conditions existing prior to service. Thus, servicemembers with an EPTS discharge record should also have an ISC indicating EPTS discharge. This study seeks to describe the ISC codes utilized among the population of reported EPTS discharges.

Methods

Figure 1.6 gives a graphic representation of how the dataset was refined for analysis. EPTS data were obtained from MEPCOM and were used as the primary study population. EPTS records were then restricted to active duty service members with an EPTS discharge occurring between 2001 and 2005. These data were then matched, using Social Security Numbers as unique identifiers, to DMDC records and appended with accession date, separation date, and ISC from the DMDC dataset.

In addition, two date restrictions were used as inclusion criteria for this study. First, servicemembers with an EPTS discharge date within 270 days of the accession date listed by DMDC were included in the analysis. Though EPTS discharges occur within 180 days of accession, this 270 day inclusion criterion allows for delays in processing of EPTS discharges. Second, individuals included within this study had a separation date, as recorded by DMDC, which was within 60 days of the EPTS discharge date indicated within the EPTS dataset. This criterion was used to ensure that the loss and EPTS were associated with the same separation event. ISC codes were then examined by service and by the primary diagnosis associated with the EPTS discharge.

FIGURE 1.6 CREATION OF THE DATASET USED FOR ANALYSIS



Results

Tables 1.38 through 1.41 show the leading ISC among individuals with an EPTS discharge record by service. Though an ISC indicating a medical discharge due to conditions existing prior to service would be expected for all individuals included in these tables, several other ISC predominate.

ISC for Army servicemembers with an EPTS discharge are shown in Table 1.38. EPTS discharges among Army members are overwhelmingly coded as unqualified for active duty, a miscellaneous medical discharge, constituting about 96% of ISC among EPTS discharges. The second most frequent code utilized among Army EPTS discharges is the ISC for EPTS medical conditions, though this makes up only 2% of the total EPTS discharges.

TABLE 1.38 LEADING ISC FOR INDIVIDUALS WITH EPTS DIAGNOSIS CODES BY SERVICE: ARMY

	Count	Percent
Unqualified for active duty-other (Medical)	9,303	95.7
Existing prior to service (Medical)	198	2.0
Trainee discharge/entry level performance and conduct (Behavior/Performance)	78	0.8
Unknown	61	0.6
Failure to meet weight/body fat standards (Medical)	50	0.5
All other	34	0.3
Total	9,724	100.0

The distribution of ISC among individuals with EPTS discharges from the Navy is shown in Table 1.39. This distribution differs from that observed among Army EPTS discharges. Though the medical discharge unqualified for active duty is the leading ISC, this code is utilized much less frequently in the Navy and is listed as the ISC for about 50% of EPTS discharges. Erroneous enlistment or induction is the second leading ISC among Navy EPTS discharges, accounting for 33.5% of ISC. Fraudulent entry is the third leading ISC and constitutes 11.4% of the ISC among Navy EPTS discharges. No Navy EPTS discharges were coded with the ISC code corresponding to discharges for preexisting conditions.

TABLE 1.39 LEADING ISC FOR INDIVIDUALS WITH EPTS DIAGNOSIS CODES BY SERVICE: NAVY

	Count	Percent
Unqualified for active duty-other (Medical)	3,007	49.5
Erroneous enlistment/induction (Other)	2,032	33.5
Fraudulent entry (Behavior/Performance)	691	11.4
Character/behavior disorder (Behavior/Performance)	136	2.2
Unknown	95	1.6
Existing prior to service (Medical)	0	0
All other	111	1.8
Total	6,072	100.0

Table 1.40 shows the leading ISC for Marine EPTS discharges by training site. Unlike the Army and the Navy, the predominant ISC cited among Marine EPTS discharges is fraudulent entry which accounts for 64.7% of EPTS discharges. Erroneous enlistment is the second most common ISC cited among Marine EPTS discharges, accounting for 18.6% of ISC.

TABLE 1.40 LEADING ISC FOR INDIVIDUALS WITH EPTS DIAGNOSIS CODES BY SERVICE: MARINES

	Count	Percent
Fraudulent entry (Behavior/Performance)	3,017	64.7
Erroneous enlistment/induction (Other)	869	18.6
Unqualified for active duty-other (Medical)	471	10.1
Trainee discharge/entry level performance (Behavior/Performance)	178	3.8
Character/behavior disorder (Behavior/Performance)	120	2.6
Existing prior to service (Medical)	0	0
All Other	8	0.2
Total	4,663	100.0

The leading ISC for Air Force EPTS discharges are shown in Table 1.41. Similar to Army and Navy EPTS discharges, unqualified for active duty medical disqualifications were the leading ISC for EPTS discharges (62.8%). Second most common among Air Force EPTS was the unknown category (24.9%) followed by fraudulent entry (12.3%).

TABLE 1.41 LEADING ISC FOR INDIVIDUALS WITH EPTS DIAGNOSIS CODES BY SERVICE: AIR FORCE

	Count	Percent
Unqualified for active duty-other (Medical)	1,371	62.8
Unknown	543	24.9
Fraudulent entry (Behavioral/Performance)	269	12.3
Existing prior to service (Medical)	0	0
All other	2	0.1
Total	2,185	100.0

Tables 1.42 through 1.45 show the diagnoses indicated in the EPTS discharge by ISC for each branch of service. Within EPTS discharge records, the condition or conditions which precipitated the discharge are indicated using the coding system within the International Statistical Classification of Diseases and Related Health Problems (ICD-9). Up to five diagnoses can be assigned to each EPTS discharge using the ICD-9 coding system. Only the primary diagnosis, or first diagnostic code indicated, was used in this analysis. Thus, the following tables show the predominant medical conditions associated with the leading ISC by service.

The leading ISC for Army EPTS discharges are shown in Table 1.42 along with the medical conditions associated with this ISC. The overwhelming majority of Army EPTS discharges are coded as a medical disqualification: unqualified for active duty-other. Asthma was the most frequently cited as the primary reason for EPTS discharge followed by neurotic disorders and pain in joint respectively. The percent of each medical condition coded as unqualified for active duty was relatively similar when comparing asthma (97.1%) EPTS discharges to discharges for neurotic disorders (97.7%). Discharges for pain in joint (93.5%) were categorized as unqualified for active duty with a slightly smaller frequency then both asthma and neurotic disorders. Thus, ISC codes among Army EPTS discharges appear to be consistently recorded regardless of the associated medical condition.

TABLE 1.42 CONDITION (ICD-9 CODE) FOR LEADING ISC: ARMY

Interservice Separation Code	Condition					
	Asthma (493)		Neurotic disorders (300)		Pain in joint (719.4)	
	Count	Percent	Count	Percent	Count	Percent
Unqualified for Active Duty-Other (Medical)	1,840	97.1	1,300	97.7	793	93.5
All other	55	2.9	30	2.3	55	6.5
Total	1,895	100	1,330	100	848	100

Table 1.43 shows the leading medical conditions for the top ISC codes among Navy EPTS discharges. Several differences are observable in the types of medical conditions that occur for each ISC. Among EPTS discharges for asthma, the most frequent ISC was unqualified for active duty, constituting 78.8% of EPTS discharges for asthma. However, among EPTS discharges for personality disorders and neurotic disorders, erroneous enlistment was the most frequently cited ISC making up 68.8% and 69.1% of EPTS discharges respectively.

TABLE 1.43 CONDITION (ICD-9 CODE) FOR LEADING ISC: NAVY

Interservice Separation Code	Condition					
	Asthma (493)		Personality disorders (301)		Neurotic disorders (300)	
	Count	Percent	Count	Percent	Count	Percent
Unqualified for Active Duty-Other (Medical)	480	78.8	1	0.2	7	1.4
Erroneous Enlistment/Induction (Other)	19	3.1	351	68.6	336	69.1
Fraudulent Entry (Behavioral/Performance)	107	17.6	56	10.9	97	20.0
All Other	3	0.5	104	20.3	46	9.5
Total	609	100	512	100	486	100

Leading ISC codes and leading medical conditions among EPTS discharges for Marines are shown in Table 1.44. Fraudulent entry was the most common ISC cited for both neurotic disorders and asthma, representing 87.5% and 76.1% of EPTS discharges respectively. Among EPTS discharges for personality disorder, fraudulent entry was a frequently cited ISC. However, the proportion of discharges for personality order classified as fraudulent entry (41.7%) was much smaller than both neurotic disorders and asthma. Erroneous enlistment was the second leading ISC cited for EPTS discharges due to asthma, making up 10.9% of total asthma discharges though this code made up a much smaller percentage of EPTS discharges for neurotic disorder (1.6%) and personality disorders (2.4%).

TABLE 1.44 CONDITION (ICD-9 CODE) FOR LEADING ISC: MARINES

Interservice Separation Code	Condition					
	Neurotic disorders (300)		Asthma (493)		Personality disorders (301)	
	Count	Percent	Count	Percent	Count	Percent
Fraudulent Entry (Behavioral/Performance)	1,039	87.5	494	76.1	103	41.7
Erroneous Enlistment/Induction (Other)	19	1.6	126	19.4	6	2.4
All Other	129	10.9	29	4.5	138	55.9
Total	1,187	100	649	100	247	100

Table 1.45 shows the leading ISC and associated medical conditions for Air Force EPTS discharges. The medical disqualification unqualified for active duty was the most frequent ISC among Air Force EPTS discharges and the leading ISC for the most prominent medical conditions precipitating discharge: asthma (62.5%), pain in joint (67.1%), and other and unspecified disorders of back (54.8%). Fraudulent entry was the second most frequently cited ISC for all conditions, representing 12.7% of asthma, 15.0% of pain in joint, and 23.4% of other and unspecified disorders of back. Observed results for Air Force EPTS discharges were relatively consistent across medical conditions. However, a slightly higher percentage of discharges associated with other and unspecified disorders of back were observed relative to other conditions accompanied by a relatively smaller percentage of discharges associated with the medical discharge unqualified for active duty.

TABLE 1.45 CONDITION (ICD-9 CODE) FOR LEADING ISC: AIR FORCE

Interservice Separation Code	Condition					
	Asthma (493)		Pain in joint (719.4)		Other and unspecified disorders of back (724)	
	Count	Percent	Count	Percent	Count	Percent
Unqualified for Active Duty-Other (Medical)	502	62.5	112	67.1	68	54.8
Fraudulent Entry (Behavioral/Performance)	102	12.7	25	15.0	29	23.4
All Other	199	24.8	30	18.0	27	21.8
Total	803	100	167	100	124	100

Conclusions

ISC among EPTS discharges varied widely when comparing the four services. Army EPTS discharges were largely coded as unqualified for activity duty by ISC codes. Navy and Air Force EPTS discharges were also coded most frequently as unqualified for activity duty by ISC codes, though neither service used this code as frequently as the Army. Among Marines, the ISC most frequently utilized was the code indicating fraudulent entry followed by the ISC for erroneous enlistment. Thus, each service utilizes the DMDC ISC codes differently when describing EPTS discharges.

Overall, the leading conditions resulting in EPTS discharge were similar when stratified by service; asthma, psychiatric conditions, and orthopedic conditions were the leading causes of EPTS discharge in all services. However, the ISC associated with each condition varied based on condition when stratifying by service. Among Army EPTS discharges, little variation in ISC was observed based on condition. Asthma among Navy EPTS discharges was more often coded as unqualified for active duty relative to psychiatric conditions which were more frequently coded as erroneous enlistment. Marines most frequently coded EPTS discharges as fraudulent entry, regardless of whether asthma or psychiatric conditions were the responsible for the discharge. Among Air Force EPTS discharges, most discharges were associated with an ISC indicating unqualified for active duty regardless of condition. Thus, despite variation in ISC observed across services, the ISC assigned to EPTS discharges appears to be relatively consistent within each service, regardless of the condition which precipitated the EPTS discharge.

When comparing DMDC data to service specific EPTS discharges, there is little agreement. Most service specific EPTS discharge records are not coded as such according to DMDC ISC. However, it is important to note that the ISC are not necessarily mutually exclusive; an EPTS record could be logically coded as any of a number of ISC codes. For example, the fact that a condition was existing prior to service does not necessarily preclude this individual from also participating in fraud to gain entry or erroneous enlistment or both. Clearly, service specific EPTS discharge records are capturing different information that DMDC loss codes. Further examination to determine how DMDC is using the ISC is warranted.

2. DESCRIPTIVE STATISTICS FOR APPLICANTS AND ACCESSIONS FOR ENLISTED SERVICE

The characteristics of the source populations applying for enlisted service in the active duty, reserve, and National Guard components of the military are described from 2001 to 2006. For active duty applicants, subsequent accessions and attritions are also shown. An enlistee *applicant* is the individual who presents to the MEPS for evaluation for acceptance into military service. An enlistee *accession* is the individual who has signed his or her oath of enlistment.

Except where otherwise noted, the following conventions apply:

- All references to year refer to calendar year.

- The "Accessions" shown in the following tables are from among the "Applicants" shown in the relevant preceding column. For example, columns showing calendar year 2006 accessions are summarizing accessions only among individuals who applied for service in calendar year 2006. Notation is made when complete follow-up is not available.

- Only data through calendar year 2006 are included. Therefore, numbers and percentages gained (i.e. accessions) among applicants in 2006 refer only to those gained through 2006 year. For legitimate comparison of accession among applicants in 2006 and the previous five years, we calculated a within calendar year accession rate, which takes into account only accessions that occurred in the same calendar year as the MEPS physical. Therefore, when 2006 and 2001-2005 figures are compared, the follow up time for observing accessions will be comparable.

- To derive percentages and rates, data sets were merged at the individual level by Social Security Number (SSN). For example, in determining the percentage of individuals gained in 2006 who received a discharge, only discharges with a SSN matching a 2006 accession record SSN were included.

- Non-missing totals may vary slightly among tables depending upon the variable by which percentages or rates are presented. Records with a missing variable value used to calculate a percentage or rate in a given table are not included in that table, though the record may appear in other tables.

- Under the subsections titled "Active Duty Applicants at MEPS with Accession Records" and "Medical Waivers," education level and age were obtained at the time of MEPS application because MEPS data are the only source of these variables for applicants. For subsections titled "Hospitalizations," "Attrition," "EPTS Discharges," and "Disability Discharges among Army and Air Force Active Duty Enlistees," education level and age at time of accession are used. Under the Delayed Entry Program, the application process can occur up to 2 years before the actual accession takes place.

- Temporary medical disqualifications are for conditions that can be remediated, such as being overweight or recently using marijuana. Permanent medical disqualifications are for all other disqualifying conditions described in DoD Instruction 6130.3.

- The DoD Instruction 6130.3 was superseded by DoD Instruction 6130.4 in CY 2005. This change is reflected in the coding of EPTS discharge conditions beginning in CY 2006. The updated classification system incorporated several extensive revisions with codes corresponding to psychiatric disorders and orthopedic conditions being the most heavily impacted. Given the breadth and scope of disease reclassification, it is not possible to directly compare EPTS data from 2006 to that from previous years; therefore these data are presented in separate tables.

- The disease classification coding system outlined by DoDI 6130.3 is also employed by the Navy and Marine Corps waiver authorities. At this time, there is no evidence to suggest that these organizations have adopted the revised coding system and it is therefore possible to compare waiver data from 2006 to the same data from previous years.

- In previous AMSARA annual reports, only the first three digits were examined for all ICD-9 codes. While this analytical approach is straightforward and consistent, the lack of uniform granularity over the full range of ICD-9 codes results in condition categories of widely divergent specificity. For example, 493 is specific to asthma where as 733 denotes a diverse array of bone and cartilage disorders, which include osteoporosis, pathologic fractures, bone cysts, and aseptic necrosis. To provide a more even coverage of the medical conditions specified in by the ICD-9, selected codes were summarized to the fourth digit. These codes were selected by identifying the top 50 three-digit ICD-9 codes recorded at MEPS in 2002 through 2006 as well as for the Army and Air Force waiver authorities (both use ICD9 codes to classify medical conditions) in the same time period. Based on expert opinion, a subset of codes was selected for grouping based on four digits rather than three. Table 2.1 provides the three digit codes selected through the above process. Please note, when a majority of codes examined out to the fourth digit do not have a fourth digit (either due to insufficient information at time of coding or to errors) it is possible to have a three-digit code appear in the top-20 medical conditions tables, even though the raw codes were examined out to the fourth digit. Such codes are treated as a distinct category and are in no case to be considered a parent term if a more specific code is present. For example, the ICD-9 groups specified by 785 and 785.0 are mutually exclusive categories and the latter is not a subset of the former.

- In 2006, the method in which multiple MEPS applications were consolidated was modified so that applications from individuals to multiple components were retained but stored in separate datasets. Therefore, a single applicant may be represented in one, two, or all three of the component-specific MEPS application datasets. The number of applicants for each year in this annual report may be higher than that documented in the previous report and therefore active duty accession rates calculated in the current report will be lower than shown previously.

TABLE 2.1 LIST OF ICD9 CODING GROUPS THAT WILL NOW BE SUMMARIZED TO THE 4TH DIGIT

ICD9	Condition
272	Disorders of lipoid metabolism
305	Nondependent abuse of drugs
306	Physiological malfunction arising from mental factors
307	Special symptoms or syndromes, not elsewhere classified
718	Other derangement of joint
719	Other and unspecified disorders of joint
724	Other and unspecified disorders of back
726	Peripheral enthosopathies and allied syndromes
733	Other disorders of bone and cartilage
746	Other congenital anomalies of heart
754	Certain congenital musculoskeletal deformities
756	Other congenital musculoskeletal anomalies
780	General symptoms
783	Symptoms concerning nutrition, metabolism, and development
784	Symptoms involving head and neck
785	Symptoms involving cardiovascular system
795	Other and nonspecific abnormal cytological, histological, immunological and DNA test findings
796	Other nonspecific abnormal findings
995	Certain adverse effects not elsewhere classified

Active Duty Applicants at MEPS with Accession Records

Tables 2.2 through 2.9 describe the population of applicants who received an accession medical examination and subsequent accessions for active duty enlisted service in the Army, Navy, Marine Corps, and Air Force.

Table 2.2 shows the numbers of applicants and the percentage of subsequent accessions among applicants between the years 2001 and 2005 and in the year 2006. The percentage of accessions is presented in two ways: 1) total accessions through 2006 and 2) accession within the same calendar year as application. The presentation of the average "within calendar year" accession rate for the years 2001 through 2005 provides a fair basis for the comparison of the "within calendar year" accession rate in 2006.

TABLE 2.2 ACCESSIONS FOR ENLISTED APPLICANTS AT MEPS WHO RECEIVED A MEDICAL EXAMINATION BY SERVICE (COMPARISON OF 2001-2005 AND 2006)

	2001 – 2005			2006	
	Applicants	Accession rate within calendar year	Accession rate overall	Applicants	Accession rate within calendar year
Army	448,179	35.9	58.2	82,947	52.5
Navy	283,663	34.8	68.8	48,228	36.0
Marines	214,660	42.3	69.7	41,466	45.2
Air Force	200,280	40.0	77.1	33,225	47.1
Total	1,146,782	-	-	205,866	-

The Navy and Marine Corps had comparable within-calendar year accession rates for 2006 (36.0% and 45.2% for the Navy and Marines, respectively) and the average within-calendar year accession rate for the previous five-year period (34.8% and 42.3%). The 2006 within-calendar year accession rate for the Army (52.5%) was considerably higher than the average within calendar year rate for the previous five years (35.9%). For the Air Force, the 2006 accession rate (47.1%) was also greater than that for 2001 through 2005 (40.0%).

Table 2.3 shows the number of applicants for enlisted service by year for 2001- 2006 and the associated accession counts and rates within one year and within two years following application. Regulations state that accessions must occur within one year of application, although it is fairly common for applicants to request and to be granted a one-year extension. The calculated accession rate within one year of application in 2005 was higher than those for 2003 and 2004 but similar to 2001 and 2002. A similar pattern was observed for the 2-year accession rates, suggesting that the lower 1-year rates did not result from a delay in the timing of some accessions. Due to the lack of full two-year follow-up data for 2005 applicants and one year follow-up for 2006 applicants, the corresponding accession rates were underestimated (see note below Table 2.3). These caveats aside, it appears that the majority of accessions (59.0% to 64.7%) occur within the first year following application while only a small proportion (3% to 4%) of additional gains are realized in the second year following application.

TABLE 2.3 ACCESSIONS WITHIN 1 AND 2 YEARS OF APPLICATION FOR ENLISTED APPLICANTS AT MEPS WHO RECEIVED A MEDICAL EXAMINATION IN 2001-2006

Year of exam	Applicants	No. within 1 year of application	% within 1 year of application	No. within 2 years of application	% within 2 years of application
2001	250,910	162,348	64.7	172,018	68.6
2002	267,363	172,128	64.4	183,058	68.5
2003	236,215	139,380	59.0	148,337	62.8
2004	195,363	105,506	54.0	114,788	58.8
2005	196,931	124,386	63.2	130,516	66.3†
2006	205,866	95,382	46.3†	-	-
Total	1,352,648	799,130	-	-	-

† The proportion of applicants who accessed was underestimated due to a lack of sufficient follow-up data since only accessions up through 2006 are reported in the above table. If the limited number of accessions occurring in 2007 is included, the percent of 2005 applicants who access within two years is 67.2% and the one-year accession for 2006 applicants is 60.4%.

Tables 2.4 through 2.7 show demographic characteristics (at time of application) and accession rates for the applicant pools in 2001-2005 and 2006. Most applicants in 2006 were male (81.5%), aged 17-20 years (71.6%), and white (76.2%). Approximately 36% of applicants had not completed high school at the time of application. This demographic profile is consistent with the demographic profile of the applicants in 2001 through 2005. Furthermore, demographic distributions of accessions largely reflect the applicant population with regard to gender, age, race, and education. Slight differences may be seen between applicants and accessions on these demographic variables, though these differences are likely attributable to random fluctuations that occur from year to year.

TABLE 2.4 GENDER OF ENLISTED APPLICANTS WHO RECEIVED A MEDICAL EXAMINATION IN 2001-2006: COMPARING ACCESSION RATES FOR 2001-2005 AND 2006

Gender	2001 – 2005				2006			
	Applicants		Accessions		Applicants		Accessions	
	Count	%	Count	%	Count	%	Count	%
Male	928,488	81.0	631,120	83.1	167,794	81.5	79,076	82.9
Female	218,286	19.0	128,574	16.9	38,070	18.5	16,306	17.1
Total[†]	1,146,782	-	759,695	-	205,866	-	95,382	-

[†] Some individuals with a missing value for gender are included in the total.

TABLE 2.5 AGE OF ENLISTED APPLICANTS WHO RECEIVED A MEDICAL EXAMINATION IN 2001-2006: COMPARING ACCESSION RATES BETWEEN 2001-2005 AND 2006

Age	2001 – 2005				2006			
	Applicants		Accessions		Applicants		Accessions	
	Count	%	Count	%	Count	%	Count	%
17 – 20	850,800	74.2	578,364	76.1	147,483	71.6	66,361	69.6
21 – 25	229,735	20.0	146,092	19.2	45,001	21.9	23,097	24.2
26 – 30	49,881	4.3	27,595	3.6	8,985	4.4	4,211	4.4
> 30	16,366	1.4	7,644	1.0	4,397	2.1	1,713	1.8
Total	1,146,782	-	759,695	-	205,866	-	95,382	-

TABLE 2.6 RACE OF ENLISTED APPLICANTS WHO RECEIVED A MEDICAL EXAMINATION IN 2001-2006: COMPARING ACCESSION RATES FOR 2001-2005 AND 2006

Race[†]	2001 – 2005				2006			
	Applicants		Accessions		Applicants		Accessions	
	Count	%	Count	%	Count	%	Count	%
White	789,327	74.0	532,113	74.4	134,866	76.2	61,921	76.6
Black	174,345	16.4	113,645	15.9	25,663	14.5	11,895	14.7
Other	102,406	9.6	69,664	9.7	16,356	9.2	7,038	8.7
Missing or declined	80,704	-	44,273	-	28,981	-	14,528	-
Total	1,146,782	-	759,695	-	205,866	-	95,382	-

[†] Note: New categories for race were available beginning in 2003. However, greater numbers of applicants chose not to indicate their race.

TABLE 2.7 EDUCATION LEVEL OF ENLISTED APPLICANTS WHO RECEIVED A MEDICAL EXAMINATION IN 2001-2006: COMPARING ACCESSION RATES BETWEEN 2001-2005 AND 2006

Education	2001 – 2005				2006			
	Applicants		Accessions		Applicants		Accessions	
	Count	%	Count	%	Count	%	Count	%
Below HS Senior†	40,723	3.6	23,979	3.2	11,698	5.7	4,372	4.6
HS Senior	369,251	32.3	247,732	32.7	62,770	30.6	21,631	22.8
HS Diploma	689,575	60.3	460,638	60.8	123,658	60.2	65,809	69.2
Some College	11,188	1.0	7,133	0.9	1,967	1.0	970	1.0
Bachelor's and above	32,280	2.8	17,632	2.3	5,206	2.5	2,294	2.4
Unknown	3,765	-	2,581	-	567	-	306	-
Total	1,146,782	-	759,695	-	205,866	-	95,382	-

† Encompasses the following: 1) those pursuing completion of the GED or other test-based high school equivalency diploma, vocational school, or secondary school, etc; 2) those not attending high school and who are neither a high school graduate nor an alternative high school credential holder; 3) one who is attending high school and is not yet a senior.

Table 2.8 shows the AFQT scores by percentile for applicants and accessions, comparing the time period of 2001 through 2005 to 2006. In 2006, the distribution of AFQT scores was roughly consistent with the distribution of AFQT scores in the previous five years. However, 8.3% of 2006 applicants and 7.9% of 2006 accessions were in the lowest AFQT score category versus 5.3% of applicants and 4.2% of accessions in 2001 through 2005. This is an observation documented in the previous annual report and could reflect an increased and sustained willingness to consider applicants from the lower aptitude categories. Note that AFQT is a nationally normalized test, so the score distribution among all applicants would not necessarily mirror the percentile ranges. Applicants scoring in the 1st through 10th percentiles are barred from the medical examination process, and are therefore not included in this table.

TABLE 2.8 AFQT SCORE CATEGORIES OF ENLISTED APPLICANTS WHO RECEIVED A MEDICAL EXAMINATION IN 2001-2006: COMPARING ACCESSION RATES FOR 2001-2005 AND 2006

AFQT score	2001 – 2005				2006			
	Applicants		Accessions		Applicants		Accessions	
	Count	%	Count	%	Count	%	Count	%
93 – 99	61,874	5.4	42,294	5.6	11,043	5.4	5,384	5.6
65 – 92	399,896	35.1	275,496	36.4	69,987	34.1	33,400	35.0
50 – 64	296,407	26.0	199,742	26.4	48,851	23.8	22,491	23.6
30 – 49	321,154	28.2	208,787	27.6	58,253	28.4	26,508	27.8
11 – 29†	60,969	5.3	31,528	4.2	17,069	8.3	7,573	7.9
Missing	6,482	0.6	1,848	0.2	663	0.3	26	0.0
Total	1,146,782	-	759,695	-	205,866	-	95,382	-

† Individuals scoring in the 10 percentile or lower are prohibited from applying.

The medical qualification status of applicants and accessions in 2006 as compared to applicants in the previous five years is shown in Table 2.9. The percentage of applicants and accessions within each category of medical qualification status in 2006 appears to be consistent with the overall percentages observed from 2001 to 2005. 80.0% of applicants in 2006 and 87.1% of accessions were classified as medically qualified for enlisted service.

10.2% of 2006 applicants received a temporary medical disqualification, whereas only 7.5% of accessions had received the same disqualification. The 2006 within-year accession rate, defined by the ratio of accessions over applicants, was slightly lower for applicants who received permanent medical disqualifications (5,199 / 20,206 = 25.7%) compared to those who received temporary disqualifications (7,119 / 21,007 = 33.9%). Both within-year accession rates were considerably lower than for fully qualified candidates (50.4%). The lower accession rate for applicants with permanent disqualifying conditions as compared to those with temporary disqualifications appears persistent since the overall accession rate for applicants in 2001 through 2005 with permanent disqualifications (36.3%) was still considerably lower than for temporary disqualifications (48.7%).

TABLE 2.9 ACTIVE DUTY ENLISTED APPLICANTS WHO RECEIVED A MEDICAL EXAMINATION IN 2001-2005 AND 2006: MEDICAL DISQUALIFICATION

DQ	2001 – 2005				2006			
	Applicants		Accessions		Applicants		Accessions	
	Count	%	Count	%	Count	%	Count	%
Fully qualified	913,771	79.7	660,174	86.9	164,653	80.0	83,064	87.1
Permanent	111,993	9.8	40,603	5.3	20,206	9.8	5,199	5.5
Temporary	121,018	10.6	58,918	7.8	21,007	10.2	7,119	7.5
Total	1,146,782	-	759,695	-	205,866	-	95,382	-

Reserve Applicants at MEPS without Accession Records

Tables 2.10 through 2.16 describe the features of applicants for the enlisted reserves of the Army, Navy, Marines, and Air Force. Data on reserve applicants who underwent medical examinations at any MEPS are shown for the period from 2001 to 2005 in aggregate and separately for 2006. These results include only civilians applying for the reserves and do not include direct accessions from active duty military.

The number of reserve applicants, by service, between the years of 2001 and 2006 is shown in Table 2.10. Though the number of applicants fluctuates from year to year, there is no noticeable trend in the number of applicants in the Army and Marines. Among Navy reservists, the number of applicants has increased in recent years. Among Air Force reservists, the number of applicants has decreased in recent years.

TABLE 2.10 RESERVE APPLICANTS AT MEPS WHO RECEIVED A MEDICAL EXAMINATION IN 2001-2006: BY SERVICE

Year of exam	Army	Navy	Marines	Air Force
2001	24,169	2,417	8,760	3,477
2002	27,872	4,119	9,169	4,395
2003	27,027	2,644	8,620	3,910
2004	19,340	5,531	8,187	3,709
2005	20,772	7,450	7,768	3,049
2006	24,097	7,329	8,150	2,822
Total	143,277	29,490	50,654	21,362

Tables 2.11 through 2.14 describe the demographics of reserve applicants at MEPS. Most reserve applicants in 2006 were male (77.0%), between the ages of 17 and 20 (70.6%), and white (75.0%). The demographic profile of reserve applicants in 2006 with respect to age, sex, and race, was consistent with that observed, in aggregate, over the past five years. Of note, however, is that the proportion of reserve applicants in 2006 who were classified as having an education level "below a high school senior" (14.5%) was higher than in previous years (9.7%). However, if these two categories are combined, the percentage of applicants who did not yet earn a high school diploma is approximately 40%, which is consistent to that proportion of applicants in 2001-2005.

TABLE 2.11 RESERVE APPLICANTS AT MEPS WHO RECEIVED A MEDICAL EXAMINATION IN 2001-2005 AND 2006: GENDER

Gender	2001 - 2005 applicants		2006 applicants	
	Counts	%	Counts	%
Male	152,015	75.1	32,637	77.0
Female	50,369	24.9	9,759	23.0
Total[†]	202,385	-	42,398	-

[†] Some individuals with a missing value for gender are included in the total.

TABLE 2.12 RESERVE APPLICANTS AT MEPS WHO RECEIVED A MEDICAL EXAMINATION IN 2001-2005 AND 2006: AGE

Age	2001 - 2005 applicants		2006 applicants	
	Counts	%	Counts	%
17 – 20	143,944	71.1	29,913	70.6
21 – 25	35,267	17.4	7,775	18.3
26 – 30	12,173	6.0	2,159	5.1
> 30	11,001	5.4	2,551	6.0
Total	202,385	-	42,398	-

TABLE 2.13 RESERVE APPLICANTS AT MEPS WHO RECEIVED A MEDICAL EXAMINATION IN 2001-2005 AND 2006: RACE

Race[†]	2001 - 2005		2006	
	Counts	%	Counts	%
White	131,756	72.2	25,482	75.0
Black	33,364	18.3	5,459	16.1
Other	17,367	9.5	3,053	9.0
Missing or unknown	19,898	-	8,404	-
Total	202,385	-	42,398	-

[†] Note: New categories for race were available beginning in 2003. However, greater numbers of applicants chose not to indicate their race.

TABLE 2.14 RESERVE APPLICANTS AT MEPS WHO RECEIVED A MEDICAL EXAMINATION IN 2001-2005 AND 2006: EDUCATION LEVEL

Education	2001 - 2005 applicants		2006 applicants	
	Counts	%	Counts	%
Below HS Senior[†]	19,636	9.7	6,119	14.5
HS Senior	56,830	28.1	10,720	25.3
HS Diploma	114,155	56.5	23,492	55.5
Some College	2,881	1.4	555	1.3
Bachelor's and above	8,538	4.2	1,441	3.4
Unknown	345	-	71	-
Total	202,385	-	42,398	-

[†] Encompasses the following: 1) those pursuing completion of the GED or other test-based high school equivalency diploma, vocational school, or secondary school, etc; 2) those not attending high school and who are neither a high school graduate nor an alternative high school credential holder; 3) one who is attending high school and is not yet a senior.

Table 2.15 shows the distribution of AFQT scores among enlisted reserve applicants at MEPS. The percentage of applicants that scored at or below the 29th percentile increased from 5.6% in 2001-2005 to 9.4% in 2006. This was observed in the previous annual report and may indicate a sustained willingness to consider applicants from the lower aptitude categories.

TABLE 2.15 RESERVE APPLICANTS AT MEPS WHO RECEIVED A MEDICAL EXAMINATION IN 2001–2005 AND 2006: AFQT SCORE

AFQT Score	2001 - 2005 applicants		2006 applicants	
	Count	%	Count	%
93 - 99	13,592	6.8	2,374	5.7
65 - 92	72,972	36.5	14,042	33.5
50 - 64	48,242	24.1	9,789	23.4
31 - 49	53,884	26.9	11,761	28.1
11 – 29[†]	11,290	5.6	3,925	9.4
Missing	2,405	-	507	-
Total	202,385	-	42,398	-

[†] Individuals scoring in the 10th percentile or lower are prohibited from applying.

The medical qualification status of the applicants for enlisted reserve is shown in Table 2.16. The proportions of applicants in the three qualification status categories were nearly the same in 2006 as found in aggregate for the previous five years. Nearly 80% of applicants were considered as fully medically qualified with equal percentages (~10%) of applicants receiving permanent or temporary disqualifications.

TABLE 2.16 RESERVE APPLICANTS AT MEPS WHO RECEIVED A MEDICAL EXAMINATION IN 2001-2005 AND 2006: MEDIC AL DISQUALIFICATIONS

DQ	2001 - 2005 applicants		2006 applicants	
	Count	%	Count	%
Fully qualified	158,402	78.3	33,565	79.2
Permanent	22,424	11.1	4,432	10.5
Temporary	21,559	10.7	4,401	10.4
Total	202,385	-	42,398	-

Army and Air National Guard Applicants at MEPS without Accession Records

Tables 2.17 through 2.23 describe the characteristics of applicants in the enlisted National Guard of the Army and Air Force. The Navy and Marines do not have a National Guard component. These tables include National Guard applicants who received a medical examination at MEPS in 2001 through 2005 (in aggregate) and 2006. Civilian applicants are the only National Guard applicants included in these tables. Direct accessions from the active duty military into the National Guard are not included.

The number of applicants to the Army and Air National Guard for each year between 2001 and 2006 are shown in Table 2.17. There were considerably more Army National Guard applicants in 2006 compared to 2005; however the number of applicants in 2005 is consistent with figures recorded back to 2001. The number of Air National Guard applicants decreased in 2001 through 2004, remained steady in 2005, and increased to over 5,000 in 2006.

TABLE 2.17 ARMY AND AIR NATIONAL GUARD APPLICANTS AT MEPS WHO RECEIVED A MEDICAL EXAMINATION IN 2001-2005 AND 2006: BY SERVICE

Year of Exam	Army National Guard	Air National Guard
2001	39,176	6,223
2002	40,647	5,803
2003	35,347	5,012
2004	32,956	4,035
2005	38,028	4,213
2006	51,983	5,085
Total	238,137	30,371

Tables 2.18 through 2.21 describe the demographics of National Guard applicants for the year 2006 relative to the aggregate demographic characteristics of applicants between 2001 and 2005. In 2006, most applicants were male (77.2%), aged 17-20 (67.9%), and white (81.2%). The majority of applicants were high school graduates (53.8%) at the time of application while most of the remaining applicants were in their senior year of high school (21.3%). In comparing National Guard applicants from 2006 with applicants from the previous five-year period, some changes in the demographic profile were apparent. For example, the proportion of 17-20 year old (67.9%) applicants in 2006 was lower than the same proportion observed in aggregate for 2001 through 2005. At the same time, there was a slight increase, in 2006, in the proportion of 21 to 25 year-old applicants (17.1% in 2001-2005, 19.8 in 2006) and over 30 years of age (4.6% vs. 6.4%). The proportion of 26-30 year olds remained the same. In addition to a difference in age structure, an increase in the proportion of white applicants was observed in 2006 (81.2%) compared to 2001-2005 (77.7%). Lastly, the proportion of applicants who were below the level of a high school senior increased in 2006 while the proportion of high school seniors decreased. However, if these two categories are combined, approximately 42% of applicants had not completed high school at the time of application. This proportion is consistent with that of the applicants in 2001 through 2005. Hence, all proportions of the education categories remained virtually the same.

TABLE 2.18 ARMY AND AIR NATIONAL GUARD APPLICANTS AT MEPS WHO RECEIVED A MEDICAL EXAMINATION IN 2001-2005 AND 2006: GENDER

Gender	2001 - 2005 applicants		2006 applicants	
	Count	%	Count	%
Male	163,152	77.2	44,491	78.0
Female	48,286	22.8	12,575	22.0
Total†	211,440	-	57,068	-

† Some individuals with a missing value for gender are included in the total.

TABLE 2.19 ARMY AND AIR NATIONAL GUARD APPLICANTS AT MEPS WHO RECEIVED A MEDICAL EXAMINATION IN 2001-2005 AND 2006: AGE

Age	2001 - 2005 applicants		2006 applicants	
	Count	%	Count	%
17 - 20	153,370	72.5	38,734	67.9
21 - 25	36,170	17.1	11,289	19.8
26 - 30	12,394	5.9	3,393	5.9
> 30	9,506	4.5	3,652	6.4
Total	211,440	-	57,068	-

TABLE 2.20 ARMY AND AIR NATIONAL GUARD APPLICANTS AT MEPS WHO RECEIVED A MEDICAL EXAMINATION IN 2001-2005 AND 2006: RACE

Race†	2001 - 2005		2006	
	Count	%	Count	%
White	143,902	77.7	33,682	81.2
Black	28,073	15.2	5,474	13.2
Other	13,312	7.2	2,304	5.6
Declined	26,153	-	15,608	-
Total	211,440	-	57,068	-

† New categories for race were available beginning in 2003. However, greater numbers of applicants chose not to indicate their race.

TABLE 2.21 ARMY AND AIR NATIONAL GUARD APPLICANTS AT MEPS WHO RECEIVED A MEDICAL EXAMINATION IN 2001-2005 AND 2006: EDUCATION LEVEL

Education	2001 – 2005 applicants		2006 applicants	
	Count	%	Count	%
Below HS Senior†	34,173	16.2	11,901	21.0
HS Senior	54,158	25.7	12,081	21.3
HS Diploma	113,074	53.8	30,553	53.8
Some College	2,770	1.3	814	1.4
Bachelor's and above	6,156	2.9	1,409	2.5
Unknown	1,109	-	310	-
Total	211,440	-	57,068	-

† Encompasses the following: 1) those pursuing completion of the GED or other test-based high school equivalency diploma, vocational school, or secondary school, etc; 2) those not attending high school and who are neither a high school graduate nor an alternative high school credential holder; 3) one who is attending high school and is not yet a senior.

Table 2.22 shows the distribution of AFQT scores among Army and Air National Guard enlistee applicants. Only 87.0% of applicants scored above the 30th percentile in 2006 compared to 90.6% of applicants in 2001-2005. Furthermore, the proportion of applicants scoring in the lowest percentile group in 2006 (13.0%) was higher than that observed in the previous five years (9.4%). In the previous annual report, the proportion of applicants in the lowest percentile groups was 14% in 2005 and 7% in 2000-2004. It appears that the increase in applicants in this group may be a long-term phenomenon and could reflect an increased willingness to consider applicants from the lower aptitude categories.

TABLE 2.22 ARMY AND AIR NATIONAL GUARD APPLICANTS AT MEPS WHO RECEIVED A MEDICAL EXAMINATION IN 2001-2005 AND 2006: AFQT SCORE

AFQT Score	2001 – 2005 applicants		2006 applicants	
	Count	%	Count	%
93 – 99	10,603	5.1	2,532	4.5
65 – 92	64,329	30.7	16,231	28.7
50 – 64	45,339	21.6	12,080	21.3
31 – 49	69,574	33.2	18,377	32.5
11 – 29†	19,781	9.4	7,372	13.0
Missing	1,814	-	476	-
Total	211,440	-	57,068	-

† Individuals scoring in the 10th percentile or lower are prohibited from applying.

The medical qualification status of National Guard applicants is shown in Table 2.23 for the year 2006 and the years 2001 through 2005. Most applicants in 2006 were classified as medically qualified (72.6%). Of those who were disqualified based on a medical condition, the majority (14.6%) were temporary disqualifications, i.e. for remediable conditions such as being overweight or recent marijuana use. In general, the distribution of medical disqualification among National Guard enlistees in 2006 was similar to the previous five years.

TABLE 2.23 ARMY AND AIR NATIONAL GUARD APPLICANTS AT MEPS WHO RECEIVED A MEDICAL EXAMINATION IN 2001-2005 AND 2006: MEDICAL DISQUALIFICATIONS

DQ	2001 - 2005 applicants		2006 applicants	
	Count	%	Count	%
Fully qualified	154,479	73.1	41,408	72.6
Permanent	26,596	12.6	7,341	12.9
Temporary	30,365	14.4	8,319	14.6
Total	211,440	-	57,068	-

Medical Disqualifications among Applicants for First-Time Active Duty Enlisted Service

Table 2.24 shows the medical disqualifications among applicants for active duty enlisted service during the period between 2002 and 2005, and separately for 2006 according to the ICD9 code assigned to each disqualifying condition. Within this table, the number of disqualifications for a given condition is provided along with the percentage of disqualified individuals receiving this disqualification in addition to the prevalence of this disqualification among all MEPS applicants. These conditions are ranked according to the number of disqualifications in 2006. Some disqualified individuals (13.5% in 2002-2006) have more than one disqualifying medical condition; therefore, the number of disqualifications is greater than the number of individuals disqualified. As mentioned previously, some codes[2] are summarized at the 4th digit level to help maintain a comparable level of coding specificity across the ICD9 categories[3].

The ICD-9 category, "796", is one of the categories that were selected for summary at the 4th digit. 879 of the codes in this group did not have a fourth digit. While the distribution of the 4th digit is not known among these codes, it is known that for those with a fourth digit, most correspond to an observation of elevated blood pressure (without a diagnosis of hypertension). The ICD9 category, "785", was also selected for 4th digit analysis. Again, the most common codes encountered in this category did not have a fourth digit. Of those that did, 75% corresponded to unspecified tachycardia while another 19% indicated undiagnosed cardiac murmurs.

The most frequently disqualifying conditions, exceeding the weight/body fat limits and nondependent *Cannabis* abuse, are considered temporary disqualifications and can be remedied. Exceeding the weight/body fat limits was the most common reason for medical disqualification in 2006, accounting for 25.1% disqualified individuals, which is slightly higher than the proportion of applicants disqualified for the same condition (22%) in 2002 through 2005. Nondependent abuse of *Cannabis* is the second most common medical disqualification observed, with 11.8% of individuals disqualified for this reason in 2006. This percentage is up from 14.3% in 2002 through 2005. The prevalence of disqualifications for obesity/overweight has increased slightly in 2006 (5,026 per 100,000 applicants) compared to the previous four years (4,409 per 100,000 applicants). During this same period, the prevalence of disqualifications for *Cannabis* abuse among MEPS applicants decreased from 2,868 in 2002-2005 to 2,358 in 2006. Disorders of refraction and accommodation (4.9%) and hearing deficiency (4.5%) were the third and fourth most common disqualifications among active duty applicants in 2006. Both conditions are permanently disqualifying. Conditions classified as other and unspecified disorders of bone and cartilage represented the fifth leading cause for medical disqualification in 2006 (3.5%). The proportion of disqualifications for asthma is noticeably lower in 2006 (3.2%) than in previous years (4.8%), which is likely the result of a relaxation of the accession standards for asthma that went into effect in June 2004.

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[2] Selected ICD9 codes are summarized in Table 2.1.

[3] For a variety of reasons including data extraction and entry, some codes belonging to the groups outlined in Table 2.1 may not have a fourth digit. When summarized, these three-digit codes are a distinct category from related four-digit categories. See page 50 paragraph 3.

TABLE 2.24 MEDICAL DISQUALIFICATIONS CATEGORIES OF FIRST-TIME ACTIVE DUTY ENLISTED APPLICANTS BY ALL ICD9 CODES: 2002 – 2006

Group (ICD9)	Condition[†]	2002 - 2005			2006		
		n	% of DQ apps[‡]	n / 100k apps[§]	n	% of DQ apps[‡]	n / 100k apps[§]
278	Obesity and other hyperalimentation	39,503	22.0	4,409	10,346	25.1	5,026
305.2	Nondependent *Cannabis* abuse	25,696	14.3	2,868	4,855	11.8	2,358
367	Disorders of refraction and accommodation	8,220	4.6	918	2,036	4.9	989
389	Hearing deficiency	9,481	5.3	1,058	1,840	4.5	894
733	Other and unspecified disorders of bone and cartilage	4,778	2.7	533	1,441	3.5	700
783.2	Abnormal loss of weight	6,184	3.4	690	1,434	3.5	697
493	Asthma	8,672	4.8	968	1,307	3.2	635
796	Other abnormal and nonspecific findings	2,676	1.5	299	879	2.1	427
305.6	Nondependent cocaine abuse	4,260	2.4	476	797	1.9	387
300	Anxiety, dissociative, and somatoform disorders	3,271	1.8	365	790	1.9	384
401	Hypertension	3,814	2.1	426	695	1.7	338
796.2	Elevated blood pressure reading without a diagnosis of hypertension	1,332	0.7	149	666	1.6	324
314	Hyperkinetic syndrome of childhood	3,645	2.0	407	579	1.4	281
550	Inguinal hernia	1,764	1.0	197	439	1.1	213
785	Symptoms involving cardiovascular system	1,539	0.9	172	391	0.9	190
692	Contact dermatitis and other eczema	1,520	0.8	170	386	0.9	188
737	Deviation and curvature of spine	1,290	0.7	144	374	0.9	182
311	Depression, not elsewhere classified	1,414	0.8	158	367	0.9	178
783.1	Abnormal weight gain	998	0.6	111	345	0.8	168
996.4	Mechanical complication of orthopedic device, implant, or graft	973	0.5	109	316	0.8	153
791	Nonspecific findings on examination of urine	957	0.5	107	289	0.7	140
717	Internal derangement of knee	1,775	1.0	198	279	0.7	136
N/A	Individuals with one or more conditions that are not specified above	63,226	35.2	7,057	13,997	34.0	6,799
	Total applicants at MEPS	895,872			205,866		
	Total of disqualified applicants	179,544			41,210		

[†] Condition categories (ICD-9 groups) are not mutually exclusive. In 2002-2006, 16% of applicants had more than one diagnosis.

[‡] Indicates the percentage of medically disqualified MEPS applicants for the specified condition.

[§] Indicates the number of individuals with the specified condition for every 100,000 applicants screened at MEPS.

Table 2.25 shows the medical disqualifications among applicants for active duty enlisted service during the period between 2002 and 2005, and separately for 2006 according to MEPCOM medical condition categories. These conditions are ranked according to the number of disqualifications in 2006. Some disqualified individuals have more than one disqualifying medical condition; therefore, the number of disqualifications is greater than the number of individuals disqualified.

As was observed in the more specific categorization presented in Table 2.24, body build and drug use are the leading categories for disqualification; these are generally considered temporarily disqualifying conditions that can be remediated by the applicant without need for an accession waiver.

TABLE 2.25 MEDICAL DISQUALIFICATIONS OF FIRST-TIME ACTIVE DUTY ENLISTED APPLICANTS BY ALL LISTED MEPCOM FAILURE CODES: 2002 – 2006

Group (OMF)	Condition†	2002 - 2005			2006		
		n	% of DQ apps‡	n / 100k apps§	n	% of DQ apps‡	n / 100k apps§
52	Weight	46,745	26.0	5,218	12,268	29.8	5,959
4O	Other drugs and psychostimulants	29,437	16.4	3,286	5,716	13.9	2,777
72	Psychological and psychomotor	13,401	7.5	1,496	2,980	7.2	1,448
37	Lower extremities	12,083	6.7	1,349	2,565	6.2	1,246
56	Temperature	806	0.4	90	2,457	6.0	1,193
35	Upper extremities	8,589	4.8	959	2,078	5.0	1,009
40	Skin lymphatics	8,108	4.5	905	1,905	4.6	925
60	Refraction	7,440	4.1	830	1,869	4.5	908
28	Lungs and chest (includes breasts)	11,060	6.2	1,235	1,867	4.5	907
71	Audiometer	9,839	5.5	1,098	1,844	4.5	896
57	Blood pressure	5,425	3.0	606	1,276	3.1	620
31	Abdomen and viscera	4,875	2.7	544	1,181	2.9	574
34	Genitourinary system	4,214	2.3	470	1,136	2.8	552
45	Urinalysis	3,603	2.0	402	1,030	2.5	500
36	Feet	5,244	2.9	585	915	2.2	444
24	Eyes – general	3,043	1.7	340	881	2.1	428
38	Spine and other musculoskeletal	3,419	1.9	382	791	1.9	384
29	Heart	2,638	1.5	294	721	1.7	350
41	Neurologic	3,020	1.7	337	707	1.7	343
58	Pulse	2,292	1.3	256	546	1.3	265
N/A	Individuals with one or more conditions that are not specified above	18,498	10.3	2,065	4,405	10.7	2,140
	Total applicants at MEPS	895,872			205,866		
	Total of disqualified applicants	179,569			41,208		

† Condition categories (ICD-9 groups) are not mutually exclusive. In 2002-2006, 16% of applicants had more than one diagnosis.

‡ Indicates the percentage of medically disqualified MEPS applicants for the specified condition category.

§ Indicates the number of individuals with the specified condition for every 100,000 applicants screened at MEPS.

Accession Medical Waivers

Applicants who receive a permanent medical disqualification at the MEPS may be granted an accession medical waiver for the disqualifying condition(s) from a service-specific waiver authority. This section summarizes the numbers of waiver considerations form 2001 to 2006. Part I examines all waiver consideration records regardless of whether or not there is a corresponding DMDC accession record. This section thus addresses the spectrum of waiver applications seen by the waiver authorities. Part II examines only those waiver records for which there is a matching accessions record in the DMDC data. This section describes the medically disqualifying conditions among enlistees who were accessed after receiving an accession medical waiver.

Individuals frequently have multiple records of waiver consideration by the same service waiver authority, likely reflecting resubmissions, perhaps with additional information. Only the most recent record for each individual for a particular service was considered in the following analyses. Therefore, the numbers of considerations do not reflect the overall workload of waiver authorities. Note that a waiver application that is denied by one waiver authority might be submitted to another. In such a case, the individual would be counted twice in the tables.

Part I: Medical waivers irrespective of an accession record

Accession medical waiver considerations for active duty enlisted applicants in 2001-2006 are summarized for the Army, Navy, Marines, and Air Force. All waiver considerations are included regardless of whether AMSARA has a corresponding MEPS record or whether the individual subsequently became an accession. Note that only waiver applications are summarized, and those applicants who are granted waivers may not necessarily become accessions. Table 2.26 shows the raw count of waiver considerations and approval percentages by branch of service and year of waiver decision. Approval percentages represent the portion of the total waivers considered, listed in the tables as "Count" that were approved. Note that a waiver can be denied by one service's waiver authority but granted by another, so the potential for counting individuals twice cannot be excluded. Data errors prevented the analysis of Navy waiver data for 2006. In the absence of new data, aggregate data for the period of 2001-2005 is presented for the Navy without comparison to 2006.

TABLE 2.26 WAIVER CONSIDERATIONS FOR ACTIVE DUTY APPLICANTS BY YEAR AND SERVICE*

Year	Army		Navy		Marines		Air Force	
	Count	% Approved	Count	% Approved	Count	% Approved	Count	% Approved
2001	11,304	60.9	5,287	44.3	3,110	44.0	2,376	55.1
2002	14,872	61.8	5,398	45.3	3,120	45.8	3,066	51.6
2003	14,248	61.7	5,734	56.0	3,505	59.2	3,646	49.7
2004	12,864	58.2	5,141	60.8	3,401	68.0	1,908	62.8
2005	12,572	56.9	6,291	66.6	3,940	68.3	1,929	50.3
2006	13,886	58.8	7,207	65.5	4,430	63.8	2,356	50.8
Total	79,746	-	35,058	-	21,506	-	15,281	-

There are no apparent trends in the numbers of waiver applications considered by the Army, and Air Force waiver authorities in 2001 through 2006. Applications considered by the Marines was highest in 2006 (4,430) than the previous years examined. The number of applications considered by the Navy and Marine Corps waiver authorities generally increased during the period from 2001 to 2006, with the number of applications increasing by 400 per year for Navy, and over 200 per year for the Marines. With few exceptions, the within-service approval rates for the Army and Air Force have been consistent through the years examined. However, an increase in the waiver approval rate is apparent in both the Navy and Marine Corps from 2001 through 2006. Prior to 2002, the approval rate for each of these services was below 50% and then nearly reached or exceeded 60% by 2003. Current approval rates are 65.5% for the Navy and 63.8% for the Marine Corps.

Tables 2.27 through 2.30 show the medical conditions for which waivers were considered and granted ranked by waivers most commonly applied for in 2006, for each branch of service. Individuals may be considered for multiple conditions (12% for the Army, 10% for the Navy, 20% for the Marines, and 9% for the Air Force); therefore the total number of conditions exceeds the number of individuals evaluated. Waiver considerations from the years 2001 to 2005 are shown in aggregate to facilitate the comparison of waivers in 2006 to previous years. Medical condition categories for the Army and Air Force were created using the first three or four[4] digits of the ICD-9 code(s) assigned to each waiver record. Navy and Marine Corps waiver authorities employ a limited subset of the ICD-9 classification scheme, which is defined in the DoD Instruction 6130.3.

Enlisted medical accession waiver considerations and approvals for the Army are shown in Table 2.27. Hearing deficiency was the most common medical disqualification for which waivers were sought in 2006, accounting for 9.5% of individuals seeking a waiver. As in previous years, the second most common accession medical waivers sought were for disorders of refraction and accommodation, representing 8.0% of waiver applicants. While applications for hearing deficiency and disorders of refraction and accommodation are still the leading two waivers sought by Army applicants, these conditions represent a slightly smaller proportion of total waiver applicants than in the previous five-year period. 5.2% of applicants were considered for waivers for conditions classified as other and unspecified disorders of bone and cartilage in 2006 which is slightly higher than the same proportion calculated for 2001-2005 (4.3%). Consistent with previous observations suggesting that disqualifications for asthma at MEPS are decreasing, only 4.2% of waiver applicants sought a waiver for this condition in 2006 as compared to 7.3% in the preceding five year period, likely a result of relaxed accession standards for asthma in June 2004. The opposite trend was observed for waiver applications concerning elevated blood pressure readings. In 2006 3.9% of all waiver applicants were considered for this disqualification; however only 2.2% of waiver applicants were considered for such a waiver in 2001-2005.

[4] Codes summarized using the first four digits are presented in Table 2.1. All other codes that are not listed in Table 2.1 are summarized using the first three digits.

TABLE 2.27 TOP CONDITIONS FOR ENLISTED ACCESSION WAIVERS CONSIDERED IN 2001 – 2005 VS 2006: ARMY*

ICD-9	Condition†	2001 - 2005				2006			
		Applied		Approved		Applied		Approved	
		Count	% of all apps‡	Count	% of apprvd apps§	Count	% of all apps‡	Count	% of apprvd apps§
389	Hearing deficiency	7,237	10.8	4,350	11.0	1,251	9.5	485	6.9
367	Disorders of refraction and accommodation	5,653	8.5	4,201	10.6	1,060	8.0	723	10.3
733	Other and unspecified disorders of bone and cartilage	2,849	4.3	2,387	6.0	689	5.2	567	8.1
493	Asthma	4,843	7.3	3,066	7.7	560	4.2	144	2.1
796.2	Elevated blood pressure reading without a diagnosis of hypertension	1,463	2.2	1,454	3.7	520	3.9	508	7.3
UDRWT	Underweight	1,203	1.8	1,001	2.5	452	3.4	343	4.9
300	Anxiety, dissociative, and somatoform disorders	1,549	2.3	575	1.4	395	3.0	106	1.5
P11.7	Other reconstructive and refractive surgery on cornea	366	0.5	323	0.8	258	1.9	224	3.2
401	Hypertension	856	1.3	385	1.0	194	1.5	31	0.4
719.4	Joint pain	836	1.3	359	0.9	194	1.5	45	0.6
305	Nondependent drug abuse, unspecified	414	0.6	173	0.4	188	1.4	66	0.9
314	Hyperkinetic syndrome of childhood	1,458	2.2	1,185	3.0	180	1.4	93	1.3
311	Depression, not elsewhere classified	768	1.2	356	0.9	180	1.4	65	0.9
996.4	Mechanical complication of internal orthopedic device, implant, and graft	138	0.2	115	0.3	170	1.3	140	2.0
737	Deviation and curvature of spine	651	1.0	296	0.7	166	1.3	83	1.2
692	Contact dermatitis and other eczema	616	0.9	486	1.2	160	1.2	109	1.6
717	Internal derangement of knee	1,692	2.5	1,114	2.8	158	1.2	59	0.8
722	Intervertebral disc disorders	444	0.7	133	0.3	149	1.1	12	0.2
746	Other congenital anomalies of heart	352	0.5	140	0.4	147	1.1	60	0.9
521	Diseases of hard tissue of teeth	382	0.6	124	0.3	137	1.0	36	0.5
N/A	Individuals with one or more conditions that are not specified above	37,924	56.8	20,928	52.7	6,798	51.4	3,424	48.9
	Total waivers considered	66,724				13,233			
	Total decisions rendered††	66,724				13,233			
	Total of approved waivers	39,716				7,002			

† Condition categories (ICD-9 groups) are not mutually exclusive. In 2001-2006, 12% of Army waiver applicants had more than one diagnosis.

‡ Indicates the percentage of waiver applicants for the specified condition category.

§ Indicates the percentage of approved waiver applicants for the specified condition category.

†† Waiver applications for which a decision (granted vs. denied) is not known are not included in this total.

Enlisted medical accession waiver considerations and approvals for the Navy are shown in Table 2.28. Only data from 2001-2005 were available therefore this table lacks a comparison group in 2006. 12.2% of all individuals considered for an accession medical waiver in 2001-2005 were evaluated for some form of hearing deficiency. The second and third most common waiver conditions were myopia and asthma, with 9.6% and 9.1% of individuals being considered for these disqualifications, respectively. Waivers for the surgical repair of fractures were the fourth most common condition evaluated by the Navy waiver authority, with 6.5% of applicants seeking such a waiver. All remaining reported conditions represented less than 4% of the total waiver applicant pool.

TABLE 2.28 TOP CONDITIONS FOR ENLISTED ACCESSION WAIVERS CONSIDERED IN 2001 – 2005: NAVY

DoDI	Condition[†]	2001 – 2005			
		Applied		Approved	
		Count	% of apps[‡]	Count	% of apprvd apps[§]
389	Hearing deficiency	3,392	12.2	1,547	10.1
367.1	Myopia	2,666	9.6	1,684	11.0
493	Asthma	2,547	9.1	1,055	6.9
733.99	Open reduction internal fixation/retained hardware	1,801	6.5	1,377	9.0
401	Hypertension	1,073	3.9	826	5.4
796	Nonspecific abnormal findings	985	3.5	587	3.8
995.0	Other anaphylactic shock	842	3.0	513	3.3
314	ADD/ADHD	839	3.0	485	3.2
754.6	Pes planus, congenital	594	2.1	447	2.9
785	Palpitations/Tachycardia	528	1.9	435	2.8
737	Deviation or curvature of spine	428	1.5	156	1.0
300	Neurotic, mood, somatoform, dissociative, or factititous disorder	426	1.5	157	1.0
795	Abnormal histological and immunological findings	404	1.4	293	1.9
746	Congenital anomalies of heart and great vessels	368	1.3	162	1.1
717.83	Old disruption of ACL	351	1.3	251	1.6
P11.7	Refractive surgery including Lamellar	350	1.3	284	1.9
692	Eczema	337	1.2	219	1.4
313	Disturbance of emotions specific to childhood and adolescence	302	1.1	99	0.6
784	Headaches	268	1.0	121	0.8
696.1	Psoriasis, current or history	265	1.0	126	0.8
N/A	Individuals with one or more conditions that are not specified above	10,449	37.5	5,555	36.3
	Total waivers considered	27,864			
	Total decisions rendered[††]	26,292			
	Total of approved waivers	15,323			

[†] Condition categories (DoDI 6130.3 groups) are not mutually exclusive. In 2001-2005, 10% of Navy waiver applicants had more than one diagnosis.

[‡] Indicates the percentage of waiver applicants for the specified condition category.

[§] Indicates the percentage of approved waiver applicants for the specified condition category.

[††] Waiver applications for which a decision (granted vs. denied) is not known are not included in this total.

Table 2.29 shows the leading conditions for which waivers were considered by the Marine Corps waiver authority. The most common condition for which accession medical waivers were sought by enlisted Marine applicants in 2006 was for open reduction and/or internal fixation of fractures (11.3% of waiver applicants), followed by hearing deficiency (8.2%), myopia (8.1%), non-specific abnormal findings (8.0%), asthma (7.7%), and neurotic, mood, somatoform, dissociative, and factitious disorders (5.3%). Although surgical repair of fractures, hearing deficiency, and myopia are the most commonly sought accession medical waivers in 2006, the most common waiver applied for in previous years was for asthma, which had accounted for 11.5% of individuals applying for an accession medical waiver in 2001-2005. However, in 2006, asthma waivers represented 7.7% of all applicants. This observation is likely due to relaxed accession standards for this condition that took place in June 2004.

TABLE 2.29 TOP CONDITIONS FOR ENLISTED ACCESSION WAIVERS CONSIDERED IN 2001 – 2005 VS 2006: MARINES

DoDI	Condition[†]	2001 - 2005				2006			
		Applied		Approved		Applied		Approved	
		Count	% of all apps[‡]	Count	% of apprvd apps[§]	Count	% of all apps[‡]	Count	% of apprvd apps[§]
733.99	Open reduction internal fixation/retained hardware	1,528	8.9	1,224	12.4	482	11.3	384	14.3
389	Hearing deficiency	1,695	9.8	488	4.9	347	8.2	179	6.7
367.1	Myopia	1,417	8.2	865	8.7	344	8.1	226	8.4
796	Nonspecific abnormal findings	1,578	9.2	904	9.1	342	8.0	219	8.2
493	Asthma	1,979	11.5	1,105	11.2	329	7.7	177	6.6
300	Neurotic, mood somatoform, dissociative, or factitious disorder	686	4.0	369	3.7	226	5.3	152	5.7
401	Hypertension	950	5.5	721	7.3	186	4.4	155	5.8
314	ADD/ADHD	975	5.7	705	7.1	149	3.5	107	4.0
995.0	Other anaphylactic shock	427	2.5	246	2.5	111	2.6	88	3.3
P11.7	Other reconstructive and refractive surgery on cornea	325	1.9	253	2.6	100	2.3	87	3.2
305	Nondependent drug abuse	190	1.1	91	0.9	92	2.2	61	2.3
785	Palpitations/Tachycardia	268	1.6	222	2.2	84	2.0	67	2.5
905.4	Lower extremity deformities, injury, weakness, insufficient recovery, and disease	291	1.7	187	1.9	80	1.9	44	1.6
P81	Surgical correction of any knee ligaments	353	2.0	252	2.5	75	1.8	54	2.0
746	Congenital anomalies of heart and great vessels	264	1.5	138	1.4	75	1.8	35	1.3
367.2	Astigmatism	240	1.4	171	1.7	73	1.7	52	1.9
692	Eczema	215	1.2	102	1.0	71	1.7	44	1.6
718.1	Shoulder instability	314	1.8	100	1.0	68	1.6	20	0.7
791	Proteinuria, current or history	162	0.9	80	0.8	68	1.6	29	1.1
784	Headaches	155	0.9	90	0.9	57	1.3	38	1.4
N/A	Individuals with one or more conditions that are not specified above	5,950	34.5	3,323	33.6	1,412	33.2	891	33.2
	Total waivers considered	17,245				4,257			
	Total decisions rendered[††]	16,154				3,633			
	Total of approved waivers	9,900				2,682			

[†] Condition categories (DoDI 6130.3 groups) are not mutually exclusive. In 2001-2006, 20% of Marine Corps waiver applicants had more than one diagnosis.

[‡] Indicates the percentage of waiver applicants for the specified condition category.

[§] Indicates the percentage of approved waiver applicants for the specified condition category.

[††] Waiver applications for which a decision (granted vs. denied) is not known are not included in this total.

Table 2.30 shows the most common conditions for which waivers were considered by the Air Force waiver authority. In addition to 2006 data, data from the years 2001 to 2005 are shown in aggregate for comparison. Disorders of refraction and accommodation were by far the most common waiver sought by active duty Air Force enlistees in 2006 (12.9% of all waiver applicants) and as well as in 2001-2005 (10.2%). Asthma (7.0%), hearing deficiency (5.6%), episodic mood disorders (5.2%), and hyperkinetic syndromes of childhood (4.5%) are the second, third, and fourth most common waivers applied for in 2006. The percentage of applicants evaluated for waivers for episodic mood disorders in 2001-2005 (2.0%) was less than half that for 2006 (5.2%).

TABLE 2.30 TOP CONDITIONS FOR ENLISTED ACCESSION WAIVERS CONSIDERED IN 2001 – 2005 VS 2006: AIR FORCE

ICD-9	Condition†	2001 - 2005				2006			
		Applied		Approved		Applied		Approved	
		Count	% of all apps‡	Count	% of apprvd apps§	Count	% of all apps‡	Count	% of apprvd apps§
367	Disorders of refraction and accommodation	1,314	10.2	744	10.8	308	12.9	176	14.5
493	Asthma	1,005	7.8	398	5.8	166	7.0	33	2.7
389	Hearing deficiency	513	4.0	70	1.0	134	5.6	4	0.3
296	Episodic mood disorders	258	2.0	138	2.0	123	5.2	63	5.2
314	Hyperkinetic syndrome of childhood	673	5.2	503	7.3	106	4.5	70	5.8
368	Visual disturbances	189	1.5	107	1.6	65	2.7	44	3.6
692	Contact dermatitis and other eczema	210	1.6	40	0.6	62	2.6	6	0.5
622	Noninflammatory disorders of cervix	176	1.4	122	1.8	52	2.2	31	2.6
754.2	Certain congenital musculoskeletal deformities of spine	176	1.4	39	0.6	50	2.1	9	0.7
785.0	Tachycardia, unspecified	26	0.2	17	0.2	48	2.0	44	3.6
718.3	Recent dislocation of shoulder	149	1.2	101	1.5	46	1.9	35	2.9
300	Anxiety, dissociative, and somatoform disorders	108	0.8	61	0.9	42	1.8	17	1.4
893	Open wound of toes	122	0.9	76	1.1	41	1.7	22	1.8
783.4	Lack of expected normal physiological development	542	4.2	450	6.5	40	1.7	32	2.6
785.2	Undiagnosed cardiac murmurs	32	0.2	24	0.3	36	1.5	30	2.5
593	Other diseases of kidney and ureter	66	0.5	29	0.4	30	1.3	12	1.0
734	Flat foot	187	1.4	134	1.9	29	1.2	19	1.6
309	Adjustment disorders	148	1.1	95	1.4	29	1.2	16	1.3
401	Hypertension	101	0.8	52	0.8	29	1.2	12	1.0
732	Osteochondropathies	129	1.0	64	0.9	28	1.2	23	1.9
N/A	Individuals with one or more conditions that are not specified above	6,670	51.6	3,808	55.4	1,176	49.4	606	50.0
	Total waivers considered	12,931				2,379			
	Total decisions rendered††	12,018				2,379			
	Total of approved waivers	6,873				1,212			

† Condition categories (ICD-9 groups) are not mutually exclusive. In 2001-2006, 9% of Air Force waiver applicants had more than one diagnosis.

‡ Indicates the percentage of waiver applicants for the specified condition category.

§ Indicates the percentage of approved waiver applicants for the specified condition category.

†† Waiver applications for which a decision (granted vs. denied) is not known are not included in this total.

Tables 2.31 through 2.34 show the top[5] waiver consideration conditions ranked by waiver approval percentage in aggregate for 2001-2006[6].

Among active duty Army applicants, nearly all waivers for cardiovascular malfunction arising from mental factors and for elevated blood pressure (no diagnosis of hypertension) were granted in both 2006 and the previous five-year period. All ten waivers for fractures of the radius and ulna were granted in 2006, but the approval rate for this category was only 88.0% in 2001-2005. Waivers for unspecified tachycardia (91.9%) also had approval rates in excess of 90% in 2006. It is worth noting that the frequency of several categories of waiver conditions, namely cardiovascular malfunction arising from mental factors, other mycoses, fractures of the radius and ulna, dermatitis due to substances taken internally, non-inflammatory disorders of the cervix, and fractures of the ankle, were considerably lower in 2006 than in previous years.

None of the most common and highly approved waivers considered by the Navy waiver authority from 2001 to 2005 had approval rates above 90%. The most commonly approved waivers were for palpitations and tachycardia (86.3%), corneal surgeries (85.3%), and shoulder instability (84.2%).

Within the Marine Corps, several conditions for which a medical accession waiver was sought in 2006 had approval rates in excess of 90%. The highest were for chronic gastritis (100%) and for dysplastic nevi syndrome (100%); however the number of applications for these waivers was low in 2006. In 2001 – 2005, the approval rates for gastritis and dysplastic nevi syndrome were 66.7% and 70.3%, respectively. Several other conditions for which waivers were sought in 2006 had approval rates in excess of 90%. These were palpitations and tachycardia (95.7%), followed by reconstructive and refractive corneal surgeries (94.6%), abnormal histological and immunological findings (94.1%), hypertension (92.8%), and surgical repair of fractures (open reduction internal fixation/retained hardware, 90.8%). Approval rates for conditions in 2006 were comparable to approval rates for the same conditions in 2001-2005.

There were only two conditions among Air Force enlistees that exceeded an approval rate of 90%. These were for hydrocele (91.7%), and unspecified tachycardia (91.7%).

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[5] The top 50 waiver condition categories for each service (summed over 2001-2006) were ordered by decreasing number of applications. From this list, the top 20 conditions for each service were ordered by decreasing approval rate (overall approval for 2001 – 2006) and are presented in tables 2.31-2.34. Each table provides the number of waivers applied for and the approval rate in aggregate for 2001-2006 ("Total" column), in aggregate for 2001-2005, and separately for 2006.

[6] The condition-specific data for the Navy in 2006 was incomplete; therefore, only 2001-2005 data are considered.

TABLE 2.31 TOP CONDITIONS FOR ENLISTED ACCESSION WAIVERS APPROVED IN 2001 – 2005 VS 2006: ARMY

ICD-9	Condition†	Total		2001 - 2005		2006	
		Count	% granted	Count	% granted	Count	% granted
306.2	Cardiovascular malfunction arising from mental factors	776	99.7	769	99.7	7	100.0
796.2	Elevated blood pressure reading without a diagnosis of hypertension	1,983	98.9	1,463	99.4	520	97.7
P11.6	Corneal transplant	446	91.9	310	92.9	136	89.7
117	Other mycoses	750	91.5	746	91.7	4	50.0
785.0	Tachycardia, unspecified	343	90.4	257	89.9	86	91.9
813	Fracture of radius and ulna	434	88.0	424	87.7	10	100.0
P11.7	Other reconstructive and refractive surgery on cornea	624	87.7	366	88.3	258	86.8
785‡	Symptoms involving cardiovascular system	820	86.9	712	87.2	108	85.2
693	Dermatitis due to substances taken internally	578	86.8	517	88.4	61	73.8
622	Non-inflammatory disorders of cervix	438	84.9	406	85.5	32	78.1
733	Other and unspecified disorders of bone and cartilage	3,538	83.5	2,849	83.8	689	82.3
UDRWT	Underweight	1,655	81.2	1,203	83.2	452	75.9
7834	Lack of expected normal physiological development	621	80.5	570	82.3	51	60.8
795§	Other and nonspecific abnormal cytological, histological, immunological, and DNA test findings	349	79.4	256	78.9	93	80.6
824	Fracture of ankle	416	78.4	399	80.4	17	29.4
314	Hyperkinetic syndrome of childhood	1,638	78.0	1,458	81.3	180	51.7
692	Contact dermatitis and other eczema	776	76.7	616	78.9	160	68.1
831	Dislocation of shoulder	706	74.1	570	76.5	136	64.0
995††	Certain adverse effects not elsewhere classified	415	73.7	313	77.0	102	63.7
367	Disorders of refraction and accommodation	6,713	73.3	5,653	74.3	1,060	68.2

† Condition categories (ICD-9 groups) are not mutually exclusive.

‡ Codes in this category typically include tachycardia, undiagnosed cardiac murmurs, and palpitations.

§ Codes in this category typically include nonspecific reaction to the tuberculin skin test (without active TB) and abnormal results from a Papanicolaou smear.

†† Codes in this category typically include unspecified allergies and anaphylactic shock.

TABLE 2.32 TOP CONDITIONS FOR ENLISTED ACCESSION WAIVERS APPROVED IN 2001 – 2005: NAVY[†]

DoDI	Condition[‡]	2001 – 2005	
		Count	% granted
785	Palpitations/tachycardia	504	86.3
P11.7	Other reconstructive and refractive surgery on cornea	333	85.3
718.1	Shoulder instability	95	84.2
733.99	Open reduction internal fixation/retained hardware	1,685	81.7
795	Abnormal histological and immunological findings	360	81.4
401	Hypertension	1,025	80.6
603.9	Hydrocele, current	147	78.2
717.83	ACL injury	321	78.2
754.6	Pes planus, congenital	576	77.6
367.2	Astigmatism	232	73.7
831	Shoulder Dislocation, unreduced, history or current (joint)	199	71.3
733.8	Malunion or non-union of any fracture	168	68.4
692	Eczema	322	68.0
726.3	Elbow limitation of motion	131	67.9
726.1	Shoulder limitation of motion	231	65.8
367.1	Myopia	2,596	64.9
311	Depression, not elsewhere classified	125	64.8
796	Nonspecific abnormal findings	916	64.1
995.0	Other anaphylactic shock	810	63.3
314	ADD/ADHD	773	62.7

† Condition-specific codes in 2006 were missing for the majority of records.

‡ Condition categories (DoDI 6130.3 groups) are not mutually exclusive.

TABLE 2.33 TOP CONDITIONS FOR ENLISTED ACCESSION WAIVERS APPROVED IN 2001 – 2005 VS 2006: MARINES

DoDI	Condition†	Total		2001 - 2005		2006	
		Count	% Granted	Count	% Granted	Count	% Granted
785	Palpitations/tachycardia	322	89.8	252	88.1	70	95.7
P11.7	Other reconstructive and refractive surgery on cornea	383	88.8	291	86.9	92	94.6
733.99	Open reduction internal fixation/retained hardware	1,854	86.7	1,431	85.5	423	90.8
401	Hypertension	1,063	82.4	896	80.5	167	92.8
905.2	Upper extremity deformities, injury, weakenss, insufficient recovery, and disease	147	79.6	120	78.3	27	85.2
717.83	ACL injury	347	79.5	300	80.0	47	76.6
314	ADD/ADHD	1,030	78.8	904	78.0	126	84.9
367.2	Astigmatism	288	77.4	227	75.3	61	85.2
P81	Surgical correction of any knee ligament	399	76.7	329	76.6	70	77.1
795	Abnormal histological and immunological findings	81	76.5	64	71.9	17	94.1
603.9	Hydrocele current	70	75.7	54	77.8	16	68.8
726.3	Elbow limitation of motion	106	73.6	82	76.8	24	62.5
854	Head injuries	145	70.3	117	65.8	28	89.3
448.1	Dysplastic Nevi syndrome	74	70.3	62	64.5	12	100.0
734	Pes planus, acquired	154	68.8	130	70.0	24	62.5
905.4	Lower extremity deformities, injury, weakness, insufficient recovery, and disease	344	67.1	277	67.5	67	65.7
490	Bronchitis	63	66.7	51	64.7	12	75.0
535	Gastritis, chronic or severe	88	66.7	81	63.5	7	100.0
995.0	Other anaphylactic shock	503	66.4	402	61.2	101	87.1
367.1	Myopia	1,652	66.0	1,368	63.2	284	79.6

† Condition categories (DoDI 6130.3 groups) are not mutually exclusive.

TABLE 2.34 TOP CONDITIONS FOR ENLISTED ACCESSION WAIVERS APPROVED IN 2001 – 2005 VS 2006: AIR FORCE

ICD9	Condition†	Total		2001 - 2005		2006	
		Count	% Granted	Count	% Granted	Count	% Granted
603	Hydrocele	52	92.3	40	92.5	12	91.7
783.4	Lack of expected normal physiological development	550	87.6	510	88.2	40	80.0
366	Cataract	56	83.9	49	83.7	7	85.7
785.0	Tachycardia, unspecified	74	82.4	26	65.4	48	91.7
785.2	Undiagnosed cardiac murmur	67	80.6	31	77.4	36	83.3
314	Hyperkinetic syndrome of childhood	739	77.5	633	79.5	106	66.0
734	Flat foot	207	73.9	178	75.3	29	65.5
718.3	Recurrent dislocation of joint	185	73.5	139	72.7	46	76.1
622	Noninflammatory disorders of cervix	216	70.8	164	74.4	52	59.6
309	Adjustment reaction	164	67.7	135	70.4	29	55.2
427	Cardiac dysrhythmias	55	67.3	49	69.4	6	50.0
368	Visual disturbances	232	65.1	167	64.1	65	67.7
733	Other and unspecified disorders of bone and cartilage	85	64.7	66	63.6	19	68.4
719.4	Joint pain	146	62.3	123	65.0	23	47.8
706	Diseases of sebaceous glands	47	61.7	36	58.3	11	72.7
893	Open wound of toes	160	61.3	119	63.9	41	53.7
724.2	Lumbago (low back pain)	66	60.6	55	58.2	11	72.7
477	Allergic rhinitis	50	60.0	35	71.4	15	33.3
718.8	Joint derangement	164	59.1	141	58.9	23	60.9
367	Disorders of refraction and accommodation	1,565	58.8	1,257	59.2	308	57.1

† Condition categories (ICD-9 groups) are not mutually exclusive.

Part II: Medical waivers with an accession record

Table 2.35A shows the numbers of applicants for enlisted service granted accession medical waiver approvals during each year from 2001 to 2006 for all service branches combined. Also shown are the numbers and percentages of these individuals who were subsequently gained onto active duty service within one and two years of waiver approval. Therefore, this table shows the return (in accessions) for the work performed by the waiver authorities (processing of waiver applications). The number of approved waivers recorded in 2006 (15,573) was the highest observed since 2003. The proportion of individuals granted waivers who subsequently become accessions within one year of waiver approval has fluctuated over the years considered, but has generally appeared to decrease from 2002 (56.2%) to 2005 (43.8%).

TABLE 2.35A ACTIVE DUTY ACCESSIONS WITHIN 1 AND 2 YEARS OF WAIVER APPROVAL FOR ALL ENLISTED APPLICANTS WHO RECEIVED A WAIVER IN 2001 – 2006[†]: BY YEAR

Year of waiver consideration	Applicants with waivers granted	Applicants who accessed within 1 year of waiver approval		Applicants who accessed within 2 years of waiver approval	
		Count	%	Count	%
2001	11,908	6,294	52.9	6,486	54.5
2002	14,661	8,234	56.2	8,462	57.7
2003	15,906	8,051	50.6	8,328	52.4
2004	14,139	6,208	43.9	6,510	46.0
2005	15,198	6,654	43.8	6,798	44.7[‡]
2006	15,573	5,694	36.6[‡]	-	-

[†] Considers all approved waiver applicants with an accession record regardless of having a MEPS physical examination record.
[‡] The accession rate was underestimated due to a lack of sufficient follow up time.

Table 2.35B shows the numbers of applicants for enlisted service who have a MEPS physical examination record and who were granted an accession medical waiver during each year from 2001 to 2006 for all service branches combined. Also shown are the numbers and percentages of these individuals who were subsequently gained onto active duty service within one and two years of application at MEPS. The number of approved waivers recorded in 2006 (13,574) was the highest observed since 2003. The proportion of individuals granted waivers who subsequently become accessions within one year of their MEPS physical has fluctuated over the years considered, but has generally appeared to decrease from 2001 (56.6%) to 2004 (45.4%).

TABLE 2.35B ACTIVE DUTY ACCESSIONS WITHIN 1 AND 2 YEARS OF PHYSICAL EXAMINATION FOR ENLISTED APPLICANTS WHO RECEIVED A WAIVER IN 2001 – 2006[†]: BY YEAR

Year of waiver consideration	Applicants with waivers granted	Applicants who accessed within 1 year of application		Applicants who accessed within 2 years of application	
		Count	%	Count	%
2001	9,860	5,583	56.6	6,417	65.1
2002	12,283	6,935	56.5	8,114	66.1
2003	13,874	6,908	49.8	8,267	59.6
2004	12,593	5,713	45.4	6,826	54.2
2005	12,258	6,404	52.2	7,206	58.8[‡]
2006	13,574	5,690	41.9[‡]	-	-

[†] Considers accessions among only those applicants with both a MEPS physical examination record and an approved waiver.
[‡] The accession rate was underestimated due to a lack of sufficient follow up time.

Tables 2.36 through 2.39 describe the characteristics of applicants who were granted waivers from all branches of service. Individuals with a corresponding MEPS application record as well as subsequent accessions are shown for 2001-2005 and separately for 2006. Like Table 2.35B, Tables 2.36 – 2.39 link waiver approval data to accession records and require both a waiver record and a MEPS physical record in order to report on demographic factors.

Total numbers of records vary slightly depending upon the completeness of data on the demographic factor being considered. For example, an individual with missing data on gender, but not race, will be included in the description of race of applicants but not in the description of gender.

The gender distribution of enlisted applicants who received a waiver is shown in Table 2.35 for all waivers and for those with subsequent accession records. In 2006 the distribution of gender among all waivers and accessions was the same as that observed in 2001-2005. In both time periods, males accounted for a larger percentage of accessions (83.7% in 2006) than they did among approved waiver applicants (81.3% in 2006).

TABLE 2.36 ACTIVE DUTY ENLISTED APPLICANTS WHO RECEIVED A WAIVER IN 2001 – 2005 VS 2006: GENDER

Gender	2001 - 2005				2006			
	All waivers		Accessed only		All waivers		Accessed only	
	Count	%	Count	%	Count	%	Count	%
Male	49,721	81.7	33,423	83.8	11,040	81.3	5,488	83.7
Female	11,147	18.3	6,439	16.2	2,534	18.7	1,065	16.3
Total	60,868	-	39,862	-	13,574	-	6,553	-

Table 2.37 shows the age distribution of enlisted applicants who received a waiver in 2001-2005 and in 2006. The majority of waiver recipients in 2006 were between the ages of 17 and 20 years, regardless of whether they accessed or not. However, the percentage of waiver recipients between the ages of 17 and 20 was smaller in 2006 than in 2001-2005. Furthermore, the percent of applicants over the age of 30 who received waivers was higher in 2006 than in previous years.

TABLE 2.37 ACTIVE DUTY ENLISTED APPLICANTS WHO RECEIVED A WAIVER IN 2001 – 2005 VS 2006: AGE

Age	2001 - 2005				2006			
	All waivers		Accessed only		All waivers		Accessed only	
	Count	%	Count	%	Count	%	Count	%
17 - 20	42,669	70.1	28,975	72.7	8,872	65.4	4,450	67.9
21 - 25	12,782	21.0	8,224	20.6	3,216	23.7	1,571	24.0
26 - 30	3,710	6.1	2,038	5.1	755	5.6	319	4.9
> 30	1,707	2.8	625	1.6	731	5.4	213	3.3
Total	60,868	-	39,862	-	13,574	-	6,553	-

Table 2.38 shows the race of enlisted applicants who received a medical waiver in 2006 and in 2001-2005. The demographic profile of applicants and accessions, with respect to race, was similar between 2006 and in previous years.

TABLE 2.38 ACTIVE DUTY ENLISTED APPLICANTS WHO RECEIVED A WAIVER IN 2001 – 2005 VS 2006: RACE

Race	2001 - 2005				2006			
	All waivers		Accessed only		All waivers		Accessed only	
	Count	%	Count	%	Count	%	Count	%
White	43,471	76.8	28,951	76.8	9,075	77.8	4,390	77.8
Black	7,956	14.1	5,283	14.0	1,463	12.5	716	12.7
Other	5,186	9.2	3,487	9.2	1,127	9.7	540	9.6
Missing or declined	4,255	-	2,141	-	1,909	-	907	-
Total	60,868	-	39,862	-	13,574	-	6,553	-

Table 2.39 shows the education level of applicants granted a medical accession waiver at the time of application in 2006 and in 2001-2005. Applicants who subsequently accessed are shown separately from applicants granted a waiver. The distribution of education level among applicants granted a waiver in 2006 is similar to that in 2001-2005. Note that the great majority of applicants granted a waiver who have not completed high school are high school seniors and will graduate prior to enlistment.

TABLE 2.39 ACTIVE DUTY ENLISTED APPLICANTS WHO RECEIVED A WAIVER IN2001 – 2005 VS 2006: EDUCATION LEVEL

Race	2001 - 2005				2006			
	All waivers		Accessed only		All waivers		Accessed only	
	Count	%	Count	%	Count	%	Count	%
Below HS senior†	2,683	4.4	1,484	3.7	767	5.7	296	4.5
HS senior	18,928	31.2	12,986	32.7	3,753	27.7	1,763	27.0
HS diploma	35,454	58.4	23,458	59.0	7,990	59.0	4,142	63.4
Some college	763	1.3	407	1.0	178	1.3	86	1.3
Bachelor's and higher	2,893	4.8	1,422	3.6	857	6.3	246	3.8
Missing	147	-	105	-	29	-	20	-
Total	60,868	-	39,862	-	13,574	-	6,553	-

† Encompasses the following three cases: 1) one who is pursuing completion of the GED or other test-based high school equivalency diploma, vocational school, or secondary school, etc.; 2) one who is not attending high school and who is neither a high school graduate nor an alternative high school credential holder; 3) one who is attending high school but is not yet a senior.

Table 2.40 shows distribution of AFQT score among enlisted applicants who received a waiver in 2001-2005 and in 2006. The distribution of AFQT is slightly different in 2006 compared to the previous five-year period. In 2006, there were higher percentages of waiver applicants who scored in the lowest percentile groups relative to 2001-2005. A similar distribution is seen among waiver applicants that subsequently accessed.

TABLE 2.40 ACTIVE DUTY ENLISTED APPLICANTS WHO RECEIVED A WAIVER IN 2001 – 2005 VS 2006: AFQT SCORE

AFQT score	2001 - 2005				2006			
	All waivers		Accessed only		All waivers		Accessed only	
	Count	%	Count	%	Count	%	Count	%
93 - 99	4,743	7.8	2,879	7.2	1,047	7.9	456	7.0
65 - 92	22,995	38.0	15,004	37.7	4,879	37.0	2,457	37.5
50 - 64	15,246	25.2	10,284	25.8	3,055	23.1	1,505	23.0
30 - 49	15,140	25.0	10,175	25.5	3,425	25.9	1,700	26.0
11 - 29	2,335	3.9	1,502	3.8	793	6.0	432	6.6
Missing	409	-	18	-	375	-	3	-
Total	60,868	-	39,862	-	13,574	-	6,553	-

Hospitalizations

This section summarizes inpatient hospitalization records of service members admitted to any military facility. Part I summarizes all such records, regardless of whether AMSARA has an accession record corresponding to the hospitalized individual. These results accordingly address the burden of disease across the military services. Part II summarizes inpatient records only among active duty enlistees who began service during 2001-2006 and for whom AMSARA has a corresponding accession record. This section accordingly examines hospitalization among active duty enlistees early in service.

Part I: Hospitalizations without an accession record

Hospitalization records of service members admitted to any military treatment facility are summarized regardless of whether AMSARA has an accession record corresponding to the hospitalized individual. Except where indicated, the tables include all hospitalizations, regardless of length of service before hospitalization. For those tables that present results according to length of service before hospitalization, the length of service was taken from a field within each hospitalization record.

Table 2.41 shows the overall hospitalization counts and percentages during the first and second years of service as well as counts of hospitalization at all lengths of service. Results are shown separately for active duty enlistees, officers, and warrant officers during 2001-2006. The proportion of enlistees hospitalized in their first and second years of active duty service greatly exceeds the corresponding percentage for both officers and warrant officers in the Army, Navy, and Marines. The percentage of Air Force enlistees who were hospitalized in their first and second years of service also exceeds that for officers; however there were too few warrant officers to make a meaningful comparison enlistees and warrant officers. The obvious disparity in the percentage of hospitalized individuals in the first two years of service observed between officers and enlistees may be accounted for, in part, by the distribution of length of service within the enlisted and officer ranks (i.e. more of the enlisted force consists of service members in their first and second years of service). In addition, the greater physical demands of basic and advanced individual training compared to officer basic training may also contribute to this disparity. Lastly, the small numbers of warrant officers in the first and second years of service for any branch of the military most likely results from the fact that members often must rise through the enlisted ranks to become warrant officers. Accordingly, very few individuals attain this rank in their first two years of service.

TABLE 2.41 HOSPITALIZATIONS IN 2001 – 2006 BY SERVICE, YEARS OF SERVICE, AND GRADE: ACTIVE DUTY

Grade	Years of service	Army		Navy		Marines		Air Force	
		Count	%	Count	%	Count	%	Count	%
Enlisted	0 - 1	22,786	14.3	6,334	8.6	7,965	19.3	6,843	13.6
	1 - 2	22,340	14.0	9,066	12.3	6,304	15.3	5,275	10.5
	All	159,388	-	73,496	-	41,310	-	50,410	-
Officer	0 - 1	375	2.3	117	1.4	48	2.4	235	2.6
	1 - 2	717	4.4	279	3.4	92	4.7	407	4.4
	All	16,180	-	8,119	-	1,977	-	9,209	-
Warrant Officer	0 - 1	8	0.3	0	0.0	0	0.0	2	28.6
	1 - 2	11	0.4	1	0.3	3	0.9	1	14.3
	All	2,564	-	291	-	325	-	7	-

Table 2.42 shows hospitalizations among the Reserves. With the exception of the Navy where the proportion of hospitalizations occurring in the first and second years of service is similar between officers and enlistees, the proportion of hospitalizations in the first and second years for enlistees in the Army, Marines, and Air Force was considerably higher for enlisted members as compared to officers. In comparing warrant officers and enlistees, the difference observed between the ranks was substantial in any service.

TABLE 2.42 HOSPITALIZATIONS IN 2001 – 2006 BY SERVICE, YEARS OF SERVICE, AND GRADE: RESERVES

Grade	Years of service	Army		Navy		Marines		Air Force	
		Count	%	Count	%	Count	%	Count	%
Enlisted	0 - 1	1,342	16.4	23	2.2	76	7.8	96	10.6
	1 - 2	447	5.5	54	5.1	65	6.7	54	6.0
	All	8,175	-	1,053	-	969	-	907	-
Officer	0 - 1	32	2.1	5	1.5	2	1.8	1	0.4
	1 - 2	43	2.8	18	5.3	1	0.9	8	3.5
	All	1,542	-	339	-	110	-	228	-
Warrant Officer	0 - 1	1	0.6	0	0.0	0	0.0	0	0.0
	1 - 2	3	1.9	0	0.0	0	0.0	0	0.0
	All	161	-	4	-	7	-	0	-

Table 2.43 shows hospitalizations for the National Guard. The striking differences between the enlisted, officer, and warrant officer ranks are again apparent in the Army and Air Force. There were no hospitalizations recorded for warrant officers in the Air National Guard and virtually all hospitalizations among warrant officers in the Army National Guard occurred among members who served more than two years.

TABLE 2.43 HOSPITALIZATIONS IN 2001 – 2006 BY SERVICE, YEARS OF SERVICE, AND GRADE: NATIONAL GUARD

Grade	Years of service	Army		Air Force	
		Count	%	Count	%
Enlisted	0 - 1	2,053	17.6	105	11.9
	1 - 2	709	6.1	45	5.1
	All	11,665	-	882	-
Officer	0 - 1	17	2.5	2	2.0
	1 - 2	8	1.2	3	3.0
	All	692	-	101	-
Warrant Officer	0 - 1	1	0.6	0	0.0
	1 - 2	1	0.6	0	0.0
	All	168	-	0	-

Hospitalizations for active duty enlisted service members are shown in Table 2.44 by condition and service for the years 2001 to 2005 in aggregate and separately for 2006. For each service, complications of pregnancy was the most common condition for which hospitalizations occurred in 2001-2005 and in 2006, though the percentage of hospitalizations attributable to this condition varied from 12.8% (Marines) to 34.4% (Navy) across services. Among enlisted Army members, complications of pregnancy (15%), injuries (9.7%), neurotic and personality disorders (8.5%), fractures (7.5%), and nonspecific symptoms (5.4%) were the most common inpatient hospitalizations occurring in 2006 and are similar to the percentages for each condition observed in years from 2001 to 2005. Among enlisted Navy members in 2006, complications of pregnancy (34.4%) were followed by neurotic and personality disorders (6.0%), and nonspecific symptoms (4.9%). Complications of pregnancy (12.8%), injuries (11.0%), and fractures (9.7%) were the most common hospitalizations among Marines in 2006. Complications of pregnancy (30.3%), neurotic and personality disorders (6.4%), and nonspecific symptoms (6.4%) were the most common hospitalizations among enlisted Air Force members in 2006.

TABLE 2.44 HOSPITALIZATION PERCENTAGES OF DIAGNOSIS CATEGORIES FOR ACTIVE DUTY ENLISTEDIN 2001 – 2005 VS 2006: BY SERVICE

Category	Army		Navy		Marines		Air Force	
	2001-2005	2006	2001-2005	2006	2001-2005	2006	2001-2005	2006
Complications of pregnancy	17.9	15.0	31.2	34.4	13.3	12.8	30.3	30.3
Injuries	8.3	9.7	3.5	3.2	9.6	11.0	2.9	2.9
Neurotic & personality disorders	8.2	8.5	7.6	6.0	8.7	7.7	8.3	6.4
Fracture	6.4	7.5	4.2	3.7	8.8	9.7	3.0	2.8
Nonspecific symptoms	5.5	5.4	5.4	4.9	4.1	3.2	6.4	6.4
Arthropathies and related symptoms	4.2	3.7	3.2	2.2	4.5	4.2	2.4	2.3
Other psychoses	3.2	3.2	3.2	3.4	3.1	4.1	2.8	2.5
Infections of skin and subcutaneous tissue	2.7	3.2	2.4	2.8	5.2	6.1	1.6	2.3
Other diseases of respiratory system	2.5	2.5	1.9	1.8	2.4	2.6	2.5	2.7
Disease of the oral cavity	2.2	1.6	1.1	0.7	1.3	0.9	2.7	2.8
Pneumonia and influenza	2.1	1.7	0.9	0.7	4.0	4.0	1.2	0.9
Appendicitis	2.0	2.0	2.7	2.9	3.2	3.0	2.9	3.2
Alcohol and drug dependence	1.7	1.6	1.9	2.0	1.8	1.8	1.0	0.8
Hernia of abdominal cavity	1.4	1.4	0.5	0.6	1.1	1.0	0.5	0.5
Noninfectious enteritis and colitis	1.0	0.8	0.8	0.8	0.8	0.7	1.0	1.0
Poisoning and toxic effects	0.9	1.2	0.8	1.0	1.6	1.3	0.5	0.6
Acute respiratory infections	0.9	0.9	0.3	0.2	0.8	0.5	0.5	0.2
Other diseases due to viruses	0.7	0.5	0.3	0.2	0.5	0.3	0.5	0.2
Chronic obstructive pulmonary disease	0.5	0.4	0.3	0.2	0.3	0.2	0.3	0.2
Other bacterial diseases	0.2	0.3	0.2	0.1	0.2	0.4	0.2	0.2
Viral diseases accompanied by exanthem	0.1	0.1	0.1	0.1	0.2	0.0	0.1	0.1
Others	27.5	29.0	27.6	28.1	24.5	24.5	28.5	30.5
Total hospitalizations	148,416	29,816	70,070	11,868	36,357	7,269	50,720	8,917

Table 2.45 shows the hospitalization percentage by component of service in aggregate for 2001-2005 and separately for 2006. The Navy and Marine Corps do not have a National Guard component. In 2006, complications of pregnancy (21.1%) were the most common reason for hospitalizations among active duty members followed by neurotic and personality disorders (7.6%), injuries (7.5%), and fractures (6.2%). Among the Reserves, the most common causes of inpatient hospitalizations were injuries (9.4%), nonspecific symptoms (7.9%), and fractures

(7.7%). A similar profile was observed for hospitalization among members of the National Guard in which the most common hospitalization was for injuries (10.2%), nonspecific symptoms (9.5%), and fractures (7.3%). In general, the contribution of each category to the sum of all hospitalizations within a service was remarkably similar between 2006 and 2001-2005.

TABLE 2.45 HOSPITALIZATION PERCENTAGES OF DIAGNOSIS CATEGORIES FOR ACTIVE DUTY ENLISTED IN 2001 – 2005 VS 2006: BY COMPONENT

Category	Active Duty		Reserves		National Guard	
	2001-2005	2006	2001-2005	2006	2001-2005	2006
Complications of pregnancy	22.4	21.1	5.8	6.2	2.3	2.6
Neurotic & personality disorders	8.1	7.6	6.5	6.2	6.6	6.3
Injuries	6.4	7.5	8.8	9.4	10.9	10.2
Fracture	5.6	6.2	6.2	7.7	8.0	7.3
Nonspecific symptoms	5.4	5.2	9.7	7.9	9.3	9.5
Arthropathies and related symptoms	3.7	3.2	3.2	3.7	2.7	3.8
Other psychoses	3.1	3.2	3.1	3.0	3.1	3.5
Infections of skin and subcutaneous tissue	2.7	3.4	3.1	2.9	3.9	3.4
Appendicitis	2.5	2.5	2.1	2.0	1.8	2.3
Other diseases of respiratory system	2.3	2.4	3.1	3.9	3.6	4.5
Disease of the oral cavity	1.9	1.5	1.3	1.2	1.3	0.4
Pneumonia and influenza	1.9	1.7	2.0	1.2	3.6	1.8
Alcohol and drug dependence	1.6	1.6	1.0	0.9	1.1	1.3
Hernia of abdominal cavity	1.0	1.1	2.0	1.5	2.4	1.8
Noninfectious enteritis and colitis	1.0	0.8	1.4	0.7	1.4	1.0
Poisoning and toxic effects	0.9	1.1	0.6	0.7	0.6	0.6
Acute respiratory infections	0.7	0.6	1.0	0.7	1.1	1.6
Other diseases due to viruses	0.6	0.4	0.7	0.2	1.1	0.7
Chronic obstructive pulmonary disease	0.4	0.3	0.6	0.2	0.6	0.6
Other bacterial diseases	0.2	0.3	0.3	0.2	0.3	0.3
Viral diseases accompanied by exanthem	0.1	0.1	0.2	0.0	0.2	0.1
Others	27.3	28.5	37.1	39.6	34.0	36.4
Total hospitalizations	305,563	57,870	11,221	2,291	10,918	2,599

Part II: Hospitalizations with an accession record, active duty enlistees only

Hospitalization records of active duty enlistees who began service during 2001-2006 and for whom AMSARA has a corresponding accession record are summarized. Relative risks are used to compare the likelihood of hospitalization across demographic groups. The baseline group chosen for each comparison depends on the factor being considered. For factors with some inherent order (e.g., age group, which ranges from younger to older) it is the first or last group in that order, as appropriate. Otherwise, the baseline group is generally the largest group.

Table 2.46 shows hospitalizations and persons hospitalized among recruits access during each year from 2001 to 2006. Hospitalizations are separated into two groups: one that includes hospitalizations that occurred in the same year as accession and one that includes hospitalizations that occurred within one year of active duty service. The former provides a basis for appropriate comparison for those gained in 2006, because hospitalization data were

available through 2006 in this report, allowing less than a full year of follow-up for this group. Because multiple hospitalizations can occur per person, results are shown both in terms of hospitalizations ("Count") and people hospitalized ("People"). The percent of people hospitalized has steadily decreased between 2001 and 2006 whether considering hospitalizations within one year of service.

TABLE 2.46 ACTIVE DUTY HOSPITALIZATIONS IN 2001 – 2006: BY YEAR

Year	Total accessed	Within same gain year			Within one year of service		
		Admissions	People	% of people	Admissions	People	% of people
2001	162,777	3,884	3,513	2.2	7,011	6,106	3.8
2002	174,109	4,724	4,241	2.4	7,771	6,734	3.9
2003	168,326	4,504	4,066	2.4	7,193	6,273	3.7
2004	140,891	3,244	2,954	2.1	5,262	4,667	3.3
2005	129,295	2,811	2,526	2.0	5,437	4,691	3.6
2006	157,312	3,963	3,544	2.3	3,956	3,538	2.2
Total	932,710	23,130	20,844	-	36,630	32,009	-

Table 2.47 shows that the risk of hospital admission within one year of accession for enlisted recruits varies by service. Army enlistees had the highest risk of hospitalization in the year following accession. This risk was significantly greater than Navy, Marine, and Air Force enlistees. Marine Corps enlistees had the second highest risk of hospitalization, which was also significantly greater than Navy and Air Force enlistees. Navy enlistees had the lowest risk of hospitalization admission.

TABLE 2.47 HOSPITAL ADMISSIONS WITHIN 1 YEAR OF ACCESSION FOR ACTIVE DUTY ENLISTED PERSONNEL ACCESSED IN 2001 – 2006: BY SERVICE

Service	Total accessed	Admissions	Individuals hospitalized			
			Count	%	Relative risk	95% CI
Army	329,665	18,453	15,968	4.84	1.00	-
Navy	233,955	5,697	5,070	2.17	0.45	0.43, 0.46
Marines	185,413	7,163	6,276	3.38	0.70	0.68, 0.72
Air Force	183,677	5,317	4,695	2.56	0.53	0.51, 0.54

Tables 2.48 through 2.52 summarize the demographic characteristics of enlistees hospitalized within one year of accession. The risk of hospitalization was significantly higher for women relative to men (Table 2.48). Table 2.49 shows that the risk of hospitalization increases significantly with advancing age relative to the youngest age group (a significant trend) and that the risk of each age group is significantly higher than the next lower age group. The highest relative risk was observed for the oldest age group (over 30). Whites had a significantly higher risk of hospitalization within a year of accession relative to blacks and individuals of any other race (Table 2.50). Those who declined to report gender had the highest hospitalization risk. Table 2.51 shows the hospitalization risk by the level of education at accession in 2001-2006. The risk of hospitalization in the first year of accession was similar for individuals in the "Below HS graduate" category and for individuals who gradated high school. Members with a Bachelor's level education or higher had a marginal, although significantly, higher risk of hospital admission, relative to high school graduates. The highest relative risk or hospitalization was for accessions who had some level of college education.

TABLE 2.48 HOSPITAL ADMISSIONS WITHIN 1 YEAR OF ACCESSION FOR ACTIVE DUTY ENLISTED PERSONNEL ACCESSED IN 2001 – 2006: BY GENDER

Gender	Total accessions	Admissions	Individuals hospitalized			
			Count	%	Relative risk	95% CI
Male	774,257	28,294	24,735	3.19	1.00	-
Female	158,445	8,336	7,274	4.59	1.44	1.40, 1.47

TABLE 2.49 HOSPITAL ADMISSIONS WITHIN 1 YEAR OF ACCESSION FOR ACTIVE DUTY ENLISTED PERSONNEL ACCESSED IN 2001 – 2006: BY AGE

Age group	Total accessions	Admissions	Individuals hospitalized			
			Count	%	Relative risk	95% CI
17 - 20	666,360	24,753	21,727	3.26	1.00	-
21 - 25	214,926	9,050	7,883	3.67	1.12	1.10, 1.15
26 - 30	40,289	2,119	1,802	4.47	1.37	1.31, 1.44
> 30	11,135	708	597	5.36	1.64	1.52, 1.78

TABLE 2.50 HOSPITAL ADMISSIONS WITHIN 1 YEAR OF ACCESSION FOR ACTIVE DUTY ENLISTED PERSONNEL ACCESSED IN 2001 – 2006: BY RACE

Race	Total accessions	Admissions	Individuals hospitalized			
			Count	%	Relative risk	95% CI
White	648,668	25,871	22,630	3.49	1.00	-
Black	139,053	5,149	4,509	3.24	0.93	0.90, 0.96
Other	88,424	2,989	2,603	2.94	0.81	0.88
Declined	56,565	2,621	2,267	4.01	1.15	1.10, 1.20

TABLE 2.51 HOSPITAL ADMISSIONS WITHIN 1 YEAR OF ACCESSION FOR ACTIVE DUTY ENLISTED PERSONNEL ACCESSED IN 2001 – 2006: BY EDUCATION LEVEL

Education level	Total accessions	Admissions	Individuals hospitalized			
			Count	%	Relative risk	95% CI
Below HS graduate[†]	6,734	249	222	3.30	0.97	0.86, 1.11
HS diploma	839,411	32,489	28,414	3.38	1.00	-
Some college	27,035	1,441	1,217	4.50	1.33	1.26, 1.41
Bachelor's or higher	19,967	832	743	3.72	1.10	1.02, 1.18
Missing	39,563	1,619	1,413	3.57	-	-

[†] Encompasses the following three cases: 1) one who is pursuing completion of the GED or other test-based high school equivalency diploma, vocational school, or secondary school, etc.; 2) one who is not attending high school and who is neither a high school graduate nor an alternative high school credential holder; 3) one who is attending high school but is not yet a senior.

Tables 2.52 shows hospital admissions within one year of accession for active duty enlisted personnel by AFQT score. As shown in the table, the risk of hospitalization is lowest among individuals scoring in the highest percentile group (93-99). Relative to the highest percentile group, the risk of hospitalization of each of the other percentile score groups is significantly

higher, with the greatest relative risk for hospitalization seen in the lowest percentile group (11-29). Lastly, the proportion of recruits hospitalized tended to increase with decreasing AFQT percentile score group.

TABLE 2.52 HOSPITAL ADMISSIONS WITHIN 1 YEAR OF ACCESSION FOR ACTIVE DUTY ENLISTED PERSONNEL ACCESSED IN 2001 – 2006: BY AFQT SCORE

AFQT score	Total accessions	Admissions	Individuals hospitalized			
			Count	%	Relative risk	95% CI
93 – 99	50,756	1,728	1,518	2.99	1.00	
65 – 92	333,492	12,715	11,168	3.35	1.12	1.06, 1.18
50 – 64	242,322	9,846	8,621	3.56	1.19	1.13, 1.26
30 – 49	257,546	10,497	9,110	3.54	1.18	1.12, 1.25
11 - 29[†]	40,424	1,737	1,503	3.72	1.24	1.16, 1.33
Missing	8,170	107	89	1.09		

[†] Individuals scoring in the 10th percentile or lower are prohibited from applying.

Tables 2.53 shows the most common categories of medical conditions resulting in hospitalization and the numbers of admissions and individuals admitted for these conditions. The category of neurotic and personality disorders is clearly the most frequent medical condition leading to hospitalization, particularly for hospitalization during the first year of service. Pneumonia and influenza are the second leading cause for hospitalizations in the first year while complications of pregnancy is the second leading condition resulting in hospital admission within two years of accession, reflecting the physically demanding nature of early enlisted service, specifically IET.

When comparing the numbers of hospitalizations within each medical category between the different follow-up periods (i.e. one and two[7] years following accession), it is clear that several conditions resulting in hospital admissions tend to occur most frequently in the first year of active duty enlisted service. In particular, hospitalizations for neurotic and personality disorders, pneumonia and influenza, and infections of the skin and subcutaneous tissues all occur with much higher frequency in the first year of service. The reduced number of hospitalizations for neurotic and personality disorders in the second year of service may reflect the fact that most enlistees experience a serious episode related to mental illness early in training are discharged soon after (2000 AMSARA Annual Report, p.23-33). Further, given the observed hospitalizations, most serious mental illnesses appear to manifest within one year of service. The lower number of hospitalizations for pneumonia and influenza may be related to a reduction in group-living situations after basic training. Contrary to the pattern of occurrence shared by hospitalizations for neurotic and personality disorders, pneumonia and influenza, admissions for complications of pregnancy increased dramatically in the second year of service, not surprising given that pregnancy is a temporary medical disqualification at MEPS. Presumably, the risk of injury is similar for recruits in the first and second years of service. Consistent with this view is the observation that hospitalizations for injuries and fractures appear to occur with similar frequency in both years of follow-up.

[7] Counts of hospitalizations within two years of service are an underestimate due to incomplete follow-up time for recruits who accessed in 2005 and 2006.

TABLE 2.53 HOSPITAL ADMISSIONS AND PERSONS HOSPITALIZED WITHIN 1 AND 2 YEARS OF SERVICE FOR ACTIVE DUTY ENLISTED PERSONNEL ACCESSED IN 2001-2006: BY MEDICAL CATEGORY

Medical category	Within one year of accession†		Within two years of accession†	
	Hospital admissions	Persons hospitalized	Hospital admissions	Persons hospitalized
Neurotic & personality disorders	8,000	6,939	11,310	9,369
Pneumonia and influenza	3,294	3,105	3,479	3,254
Infections of skin and subcutaneous tissue	2,588	2,432	3,449	3,174
Other psychoses	2,029	1,628	3,194	2,313
Fracture	1,967	1,734	4,177	3,287
Nonspecific symptoms	1,797	1,537	2,691	2,208
Injuries	1,733	1,460	4,574	3,414
Other diseases of respiratory system	995	881	1,638	1,394
Acute respiratory infections	934	886	1,063	1,002
Appendicitis	808	786	1,487	1,408
Complications of pregnancy	793	676	9,372	8,044
Alcohol and drug dependence	711	582	1,375	1,120
Poisoning and toxic effects	652	564	1,125	924
Other diseases due to viruses	623	584	747	695
Hernia of abdominal cavity	551	526	792	737
Disease of the oral cavity	462	428	852	765
Arthropathies and related symptoms	381	323	1,120	935
Noninfectious enteritis and colitis	341	294	566	461
Chronic obstructive pulmonary disease	261	223	343	294
Other bacterial diseases	236	217	278	252
Viral diseases accompanied by exanthem	109	102	134	120
Other	7,365	6,102	12,318	9,466
Total	36,630	32,009	66,084	54,636

† The numbers of hospitalizations and persons hospitalized within one year of accession are slightly underestimated because of insufficient follow-up for recruits who were gained in 2006. The above figures for hospital admissions and people hospitalized within two years of accession are also underestimates given that there is insufficient follow-up time for recruits who gained in both 2005 and 2006.

Attrition

Attrition is one of many outcomes of key interest to AMSARA. This section will provide a basic description of all-cause attrition among first-time active duty recruits accessed into the Army, Navy, Marines, and Air Force in 2000 through 2005. Figures 2.1 through 2.7 display the cumulative likelihood of attrition within this group at 90, 180, 365, and 730 days following accession onto active duty service with respect to service, year of accession, and various demographic factors. Age, education level, and AFQT score at accession (not application) were considered in this analysis. Attrition at each time point was derived from life table calculations, which adjusted the likelihood of attrition to account for censored observations. Censoring may result from a lack of full follow-up or from certain DMDC transactions that result in a loss date but that should not considered as true losses. These pseudo losses include 1) admission to officer commissioning programs; 2) warrant officer programs; 3) entry into service academies; 4) expiration of term of service; 5) retirement; and 6) immediate reenlistment. Loss records generated for the six events enumerated above were not counted among the attritions reported in the following figures.

Figure 2.1 shows the proportion of active duty accessions gained in 2000-2005 who were lost to attrition at specified times of follow-up after their date of accession. The proportion of accessions that subsequently attrited was consistently lower at all points of follow-up for the Air Force compared to all other services. After two years of service, the proportion of attritions was highest for the Army (25.9%) followed closely by the Navy (22.8%). The Air Force and Marines had comparable percentages of accessions lost to attrition.

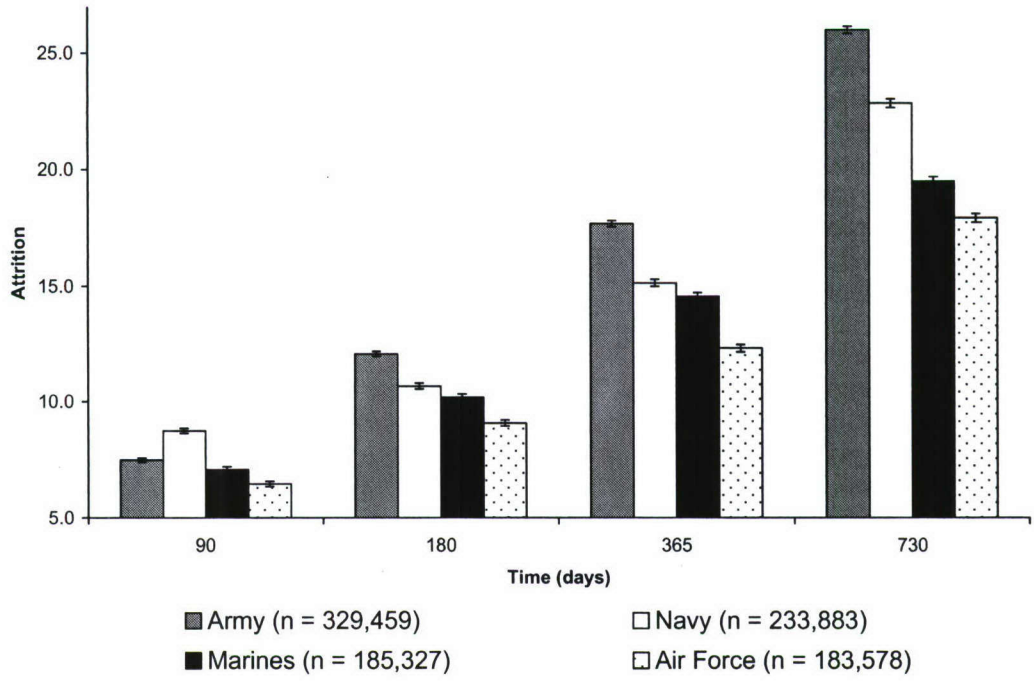

FIGURE 2.1 Attrition among first-time, active-duty recruits in CY 2001 – CY 2006 at 90, 180, 365, and 730 days following accession. Separate plots are shown for the Army (grey), Navy (white), Marines (black), and Air Force (stippled).

Figure 2.2 describes the attrition profile for active duty enlistees who accessed into the Army, Navy, Marine Corps, and Air Force by accession year. There do not appear to be any obvious trends in the proportion of accessions lost at 90 days of follow-up or greater over the years considered. However, there is a general tendency for loss at 90 days of follow-up to decrease from 2001 to 2005. Regardless of accession year, approximately 21% to 24% of recruits were lost to attrition after two years of service[8].

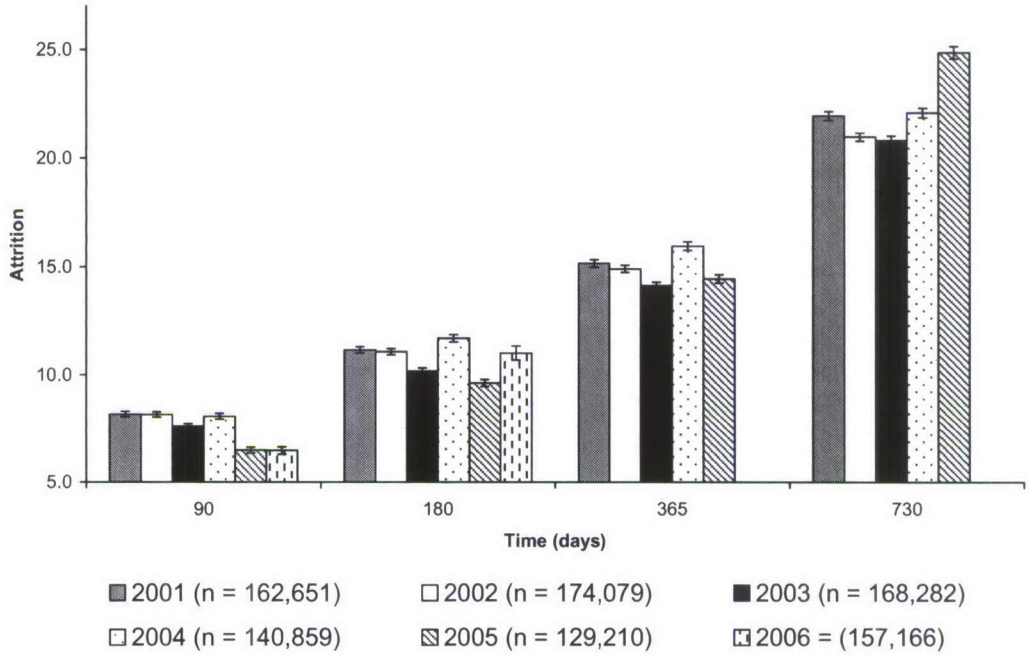

FIGURE 2.2 Attrition among first-time, active-duty recruits in CY 2001 – CY 2006 at 90, 180, 365, and 730 days following accession. Separate plots are shown for each year of accession. Attrition for recruits gaining in 2006 was calculated at 90 and 180 days, only. Grey, white, black, stippled, cross hatched, and stitched bars respectively represent recruits accessed in 2001, 2002, 2003, 2004, 2005, and 2006.

[8] Attrition among 2006 accessions was examined only at 90 and 180 days following the start of active duty service.

Figures 2.3 through 2.6 describe the attrition profile for active duty enlistees who accessed into the Army, Navy, Marine Corps, and Air Force by gender, race, age at accession, education at accession, and AFQT score at accession. As seen in Figure 2.3, the proportion of accessions lost is consistently higher at all points of follow-up for females relative to males, even at the earliest point of assessment (90 days) where 10.7% of women were already lost to attrition as compared to only 6.9% of men. At the end of two years of service, cumulative attrition was 30.3% for females and 20.6% for males.

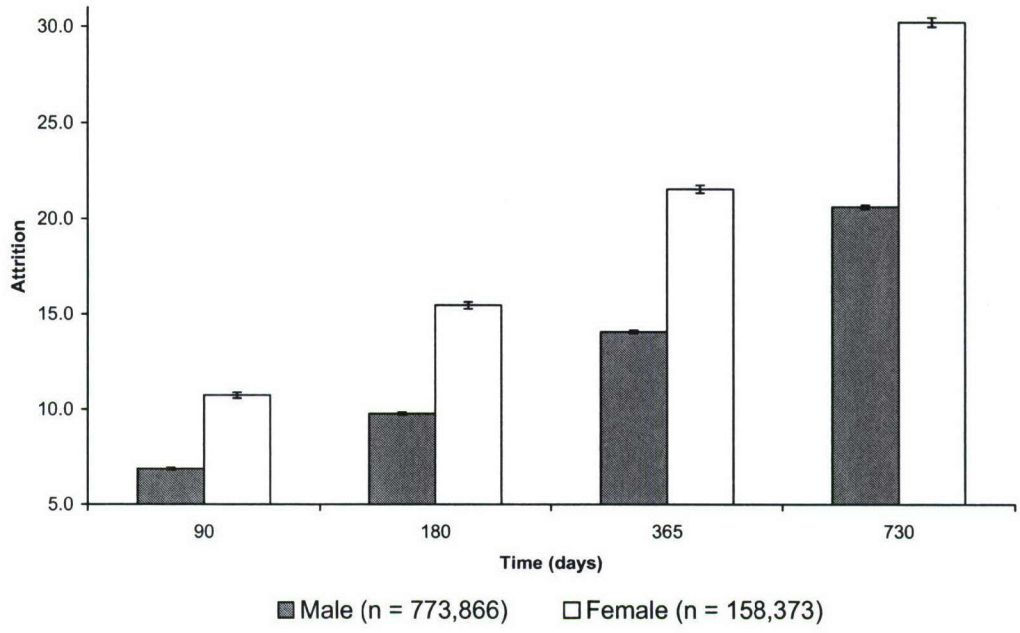

FIGURE 2.3 Attrition among first-time, active-duty recruits in CY 2001 – CY 2006 at 90, 180, 365, and 730 days following accession. Separate plots are shown for men (grey) and women (white).

Attrition was comparable for all categories of race (when it was specified), although individuals who identified themselves of members of any race other than black or white tended to have lower attrition at all points of follow-up (Figure 2.4). Whites consistently had among the highest proportion of losses among accessions at 90 days (7.8%) through 2 years (22.5%).

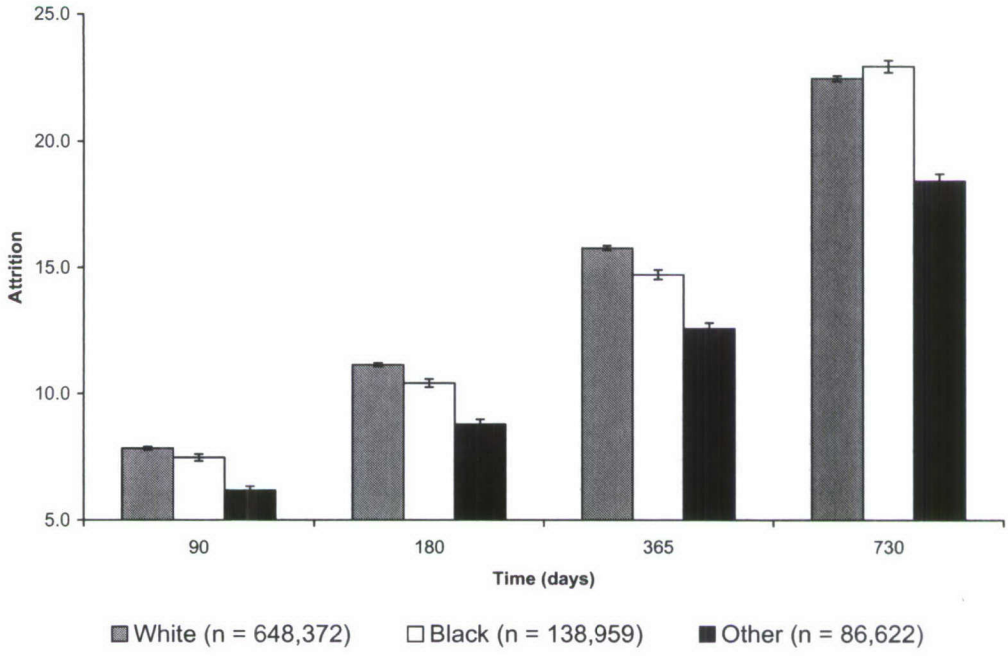

FIGURE 2.4 Attrition among first-time, active-duty recruits in CY 2001 – CY 2006 at 90, 180, 365, and 730 days following accession. Separate plots are shown for enlistees who identified themselves as white (grey), black (white), or as a member of any other race (black).

Cumulative attrition was highest for the oldest age group at each time point over the two-year period (Figure 2.5). From the oldest age group to the youngest, observed attrition was progressively lower. Among 17 to 20-year olds, attrition was 7.2% at 90 days and 22.0% after 2 years. For accessions over 30 years of age, attrition was 10.7% at 90 days and 28.3% at 730 days.

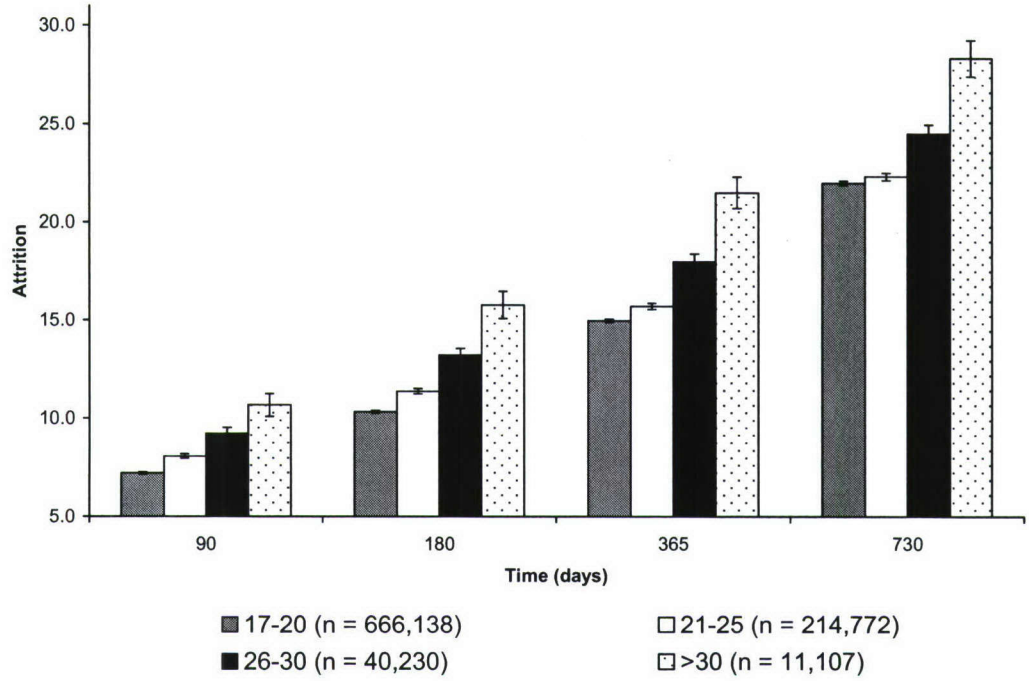

FIGURE 2.5 Attrition among first-time, active-duty recruits in CY 2001 – CY 2006 at 90, 180, 365, and 730 days following accession. Separate plots are shown for 17-20 year olds (grey) 21-25 year olds (white), 26-30 year olds (black), and accessions over 30 years of age (stippled).

When attrition was examined by education level (Figure 2.6) and it was found that enlistees with less than a high school education at gain had the highest level of attrition at all time points. Recruits with a Bachelor's degree or higher at gain had the lowest cumulative attrition at all time points. Attrition at 90-days post accession was 12.0% for the lowest education group and 4.7% for recruits with a Bachelor's degree or higher. After two years of follow-up, the proportion lost among those who had accessed with a Bachelor's degree or higher was only 15.4% compared to 32.2% for recruits who hadn't graduated high school by the time of accession.

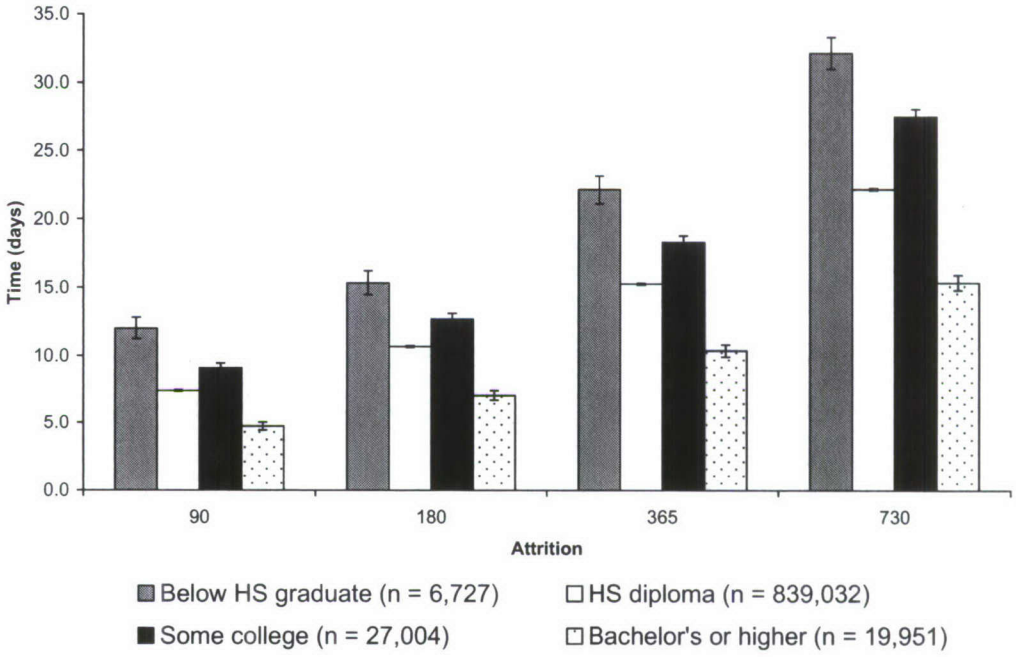

FIGURE 2.6 Attrition among first-time, active-duty recruits in CY 2001 – CY 2006 at 90, 180, 365, and 730 days following accession. Separate plots are shown for specified categories of education level attained at time of accession. Grey, white, black, and stippled bars respectively represent recruits with less than a high school education, a high school diploma, some college, or a Bachelor's degree and higher. Those with less than a high school education (grey) encompass the following three cases: 1) one who is pursuing completion of the GED or other test-based high school equivalency diploma, vocational school, or secondary school, etc.; 2) one who is not attending high school and who is neither a high school graduate nor an alternative high school credential holder; 3) one who is attending high school but is not yet a senior.

Figure 2.7 presents data on the attrition profile of recruits by AFQT percentile score group. The proportion lost at all points of follow-up was lowest for the highest percentile score group (93-99) and generally increased for progressively lower scoring categories. This was true for each point of follow-up. In addition, the increase in the proportion of attritions was highest among the lowest scoring group and lower for the higher scoring groups.

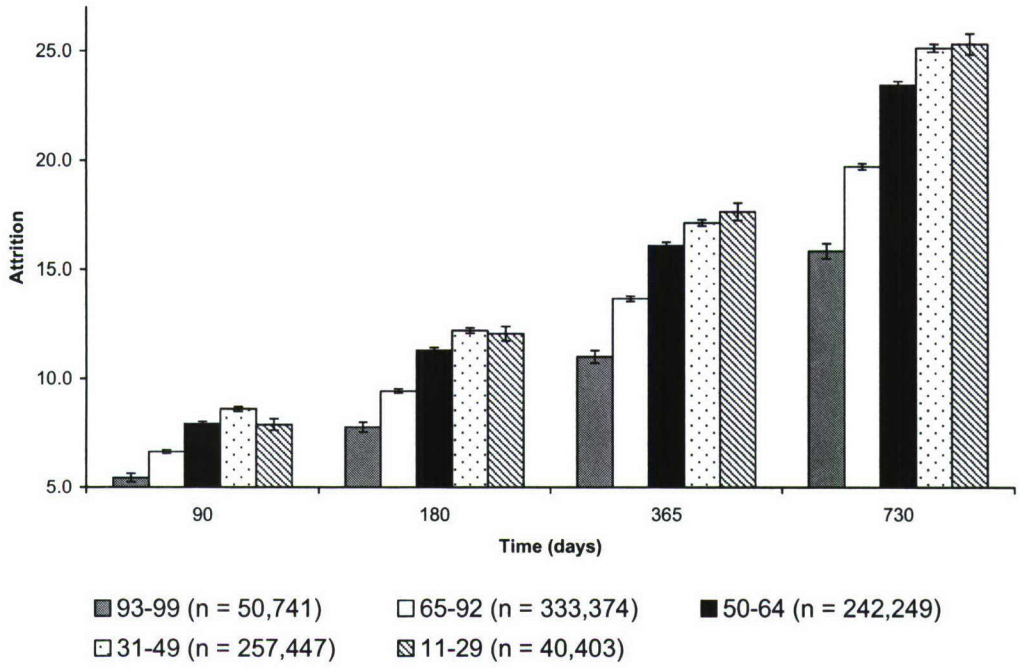

FIGURE 2.7 Attrition among first-time, active-duty recruits in CY 2001 – CY 2006 at 90, 180, 365, and 730 days following accession. Separate plots are shown for specified groups based on AFQT score at time of accession. Grey, white, black, stippled, and cross-hatched bars respectively represent accessions in the 93-99, 65-92, 50-64, 31-49, and 11-29 percentile score groups. Note that individuals scoring below the 10th percentile are barred from application.

Table 2.54 shows the median as well as 25th and 75th percentile times to loss observed for the most common discharge categories. The most common types of discharge were for issues with behavior and performance and generally occurred within 11 months of service. Discharges for medical reasons were the second most common discharge with a median time to event of only 7 months. Erroneous enlistment resulted in the quickest discharges (median = 38 days) where as early release resulted in discharges with the longest time to event, nearly three years and 7 months. Interestingly, the median time to discharge for losses due to EPTS was 530 days, nearly triple the 180-day limit[9].

TABLE 2.54 MEDIAN TIME TO LOSS FOR DISCHARGES OCCURING AMONG ACTIVE DUTY ENLISTEES ACCESSED INTO THE ARMY, NAVY, MARINES, AND AIR FORCE IN 2000 TO 2005

Discharge type	Count	% of total	Time to loss		
			Median	25th percentile	75th percentile
Erroneous enlistment	12,131	6.4	38	24	72
Breach of contract	572	0.3	149	84	268
Medical	47,048	24.9	209	59	839
Behavior/Performance	110,794	58.5	338	96	745
EPTS	2,785	1.5	530	251	884
Dependency or hardship	1,483	0.8	650	312	1,074
Other	12,493	6.6	702	369	1,088
Death	1,336	0.7	733	438	1,096
Early release	669	0.4	1,347	1,051	1,414

[9] The cause for discharge was determined from the inter-service separation code provided in each DMDC loss record. Discharges coded as EPTS in the loss record likely reflect only a subset of all EPTS discharges which are reported separately to AMSARA by MEPCOM *via* the service training sites.

EPTS Discharges

Discharges for medical conditions existing prior to service (EPTS) are of vital interest to AMSARA. A discharge can be classified as EPTS if the condition was verified to have existed before the recruit began service and if the complications leading to discharge arose no more than 180 days after the recruit began duty. EPTS data reporting has varied by site and over time – see Data Sources section for details (Page 113, Table 3.1).

Part I summarizes the EPTS records provided to AMSARA, regardless of whether a corresponding accession record is available. EPTS records for active duty, Reserves, and Nation Guard members are included. Part II only summarizes records for which a corresponding accession record is available; only active duty discharges are included.

Part I: EPTS discharges irrespective of accession record

Included among the EPTS records provided to AMSARA are records for recruits in Initial Entry Training (IET) for the Reserves and National Guard; AMSARA does not currently hold complete accessions data on these components. In addition, some active duty enlistee EPTS records do not have a matching accession record. Accordingly, the tables in Part I show the numbers of EPTS discharge records provided by the IET sites, regardless of whether a corresponding accession record is available to AMSARA.

The number of EPTS discharge records by service branch, component, and year of discharge are shown for the period between 2001 and 2006 in Table 2.55. Numbers for each service and component often differ considerably from year to year. For example, the number of records received for active duty Army recruits was only 1,472 compared to figures of over 2,000 in previous years. Large fluctuations in the numbers of reported EPTS discharges are also apparent for active duty Navy (CY 2004) and Air Force. For example, Air Force reported EPTS discharges ranged from 566 in CY 2005 to 951 in CY 2006. The downturn in reported Navy EPTS discharges in CY 2004 resulted from a turnover of personnel responsible for reporting such discharges. Prior to 2005, the numbers of reported EPTS discharges for active duty Army were relatively stable, although this apparent stability may be complicated by substantial fluctuations in the reporting of EPTS discharges by each site (see "Data Sources" for details, Page 113, Table 3.1). Lastly, the number of reported EPTS discharges among the National Guard and Reserve components was quite low and it is not known if this is a reflection of actual events or the result of underreporting for these components.

TABLE 2.55 EPTS DISCHARGES IN 2001 – 2006 BY SERVICE, COMPONENT, AND YEAR

Service	Component	2001	2002	2003	2004	2005	2006	Total
Army	Active Duty	3,096	3,273	3,456	3,150	2,369	1,472	16,816
	National Guard	556	502	561	675	630	445	3,369
	Reserves	405	225	352	473	337	285	2,077
Navy	Active duty	1,820	1,815	1,311	998	1,231	1,307	8,482
	Reserves	1	2	5	1	18	62	89
Marines	Active Duty	891	1,124	1,367	1,538	1,316	1,408	7,644
	Reserves	85	77	192	216	132	204	906
Air Force	Active Duty	257[†]	752	703	680	566	951	3,909
	National Guard	5	3	4	2	2	4	20
	Reserves	8	26	54	55	42	68	253
Total		7,124	7,799	8,005	7,788	6,643	6,206	43,565

[†] Air Force didn't provide EPTS discharge records in April 2000 to September 2001, hence the 257 was only for three months in 2001.

Table 2.56 shows EPTS discharges between 2001 and 2006 for each branch of service by medical categories defined by USMEPCOM. The results are sorted according to the numbers of discharges from the Army, the largest service and the one with the most reported EPTS discharges. Psychiatric discharges were the most common cause of EPTS discharges in the Army, Navy, and Marines, accounting for 19.9%, 27.1%, and 39.1% of EPTS discharges, respectively. However, asthma was the leading cause of EPTS discharges in the Air Force (31.7%). Asthma was also a large contributor of EPTS discharges across the other three services, as were orthopedic conditions. As a group, orthopedic conditions, including knee, back, feet, and other, account for 36.1% of discharges from the Army. Orthopedic conditions were also leading causes of EPTS discharges in the Navy (27.8%), Marines (18.8%), and Air Force (34.8%). The difference in category frequencies may be due in part to differences in how each service categorizes and reports EPTS discharges. Accordingly, difference across services may reflect procedural differences more than true EPTS rates, and any comparisons across services should be made cautiously.

TABLE 2.56 EPTS DISCHARGES IN 2001 – 2006 BY CATEGORY

Condition	Army		Navy		Marines		Air Force†	
	Count	%	Count	%	Count	%	Count	%
Psychiatric - other	4,438	19.9	2,319	27.1	3,343	39.1	61	1.5
Asthma	3,919	17.6	892	10.4	1,156	13.5	1,327	31.7
Ortho - other	2,828	12.7	841	9.8	647	7.6	333	8.0
Ortho - knee	2,132	9.6	706	8.2	458	5.4	454	10.9
Ortho - back	1,918	8.6	560	6.5	375	4.4	325	7.8
Ortho - feet	1,155	5.2	280	3.3	119	1.4	339	8.1
Other - general	971	4.4	404	4.7	561	6.6	221	5.3
Genitourinary system	908	4.1	402	4.7	283	3.3	130	3.1
Neurology - other	767	3.4	300	3.5	430	5.0	307	7.3
Abdomen and viscera	515	2.3	173	2.0	213	2.5	107	2.6
Cardiovascular - other	449	2.0	136	1.6	130	1.5	114	2.7
Eyes - other	381	1.7	439	5.1	171	2.0	104	2.5
Seizure disorder	373	1.7	109	1.3	90	1.1	57	1.4
Skin & lymphatics	345	1.5	221	2.6	135	1.6	94	2.2
Cardiovascular - hypertension	302	1.4	78	0.9	75	0.9	16	0.4
Chest & lung - other	275	1.2	129	1.5	132	1.5	57	1.4
Ears - hearing	99	0.4	125	1.5	130	1.5	10	0.2
Eyes - refraction	55	0.2	40	0.5	20	0.2	22	0.5
Ears - other	42	0.2	78	0.9	44	0.5	2	0.0
Schizophrenia	42	0.2	8	0.1	10	0.1	0	0.0
Missing	348	1.6	331	3.9	28	0.3	102	2.4
Total	22,262		8,571		8,550		4,182	

† The Air Force did not provide records for EPTS discharges in April 2000 – September 2001, so the 2001-2006 aggregate numbers for the Air Force are underestimates.

The medical causes of EPTS discharges for each service are more thoroughly examined by medical conditions that are disqualifying for enlisted service, as listed in the DoD Instructions 6130.3 and 6130.4. Prior to 2006, EPTS discharge conditions were coded according to the DoDI 6130.3. However, beginning in 2006 the discharge conditions were coded using DoDI 6130.4. Codes corresponding to psychiatric disorders and orthopedic conditions underwent a substantial revision. Given the breadth and scope of disease reclassification, it is not possible to directly compare EPTS data from 2006 to that from previous years. Therefore, these data are presented in separate tables and are not intended for direct comparison. Tables 2.57 through 2.60 summarize the primary medical conditions leading to EPTS discharge by service for 2001-2006. Part A of each table presents data from 2001-2005 (DoDI 6130.3) while Part B summarizes data for 2006 (DoDI 6130.4), alone. Data from 2001-2005 is sorted by the total number of discharges in that time period (total column not shown).

Table 2.57A shows the top 20 conditions leading to EPTS discharge in the Army during 2001 to 2005. Asthma was the leading EPTS condition over the time period examined but the number of individual discharges for this condition dropped considerably in 2005. Over the entire period considered, neurotic disorders, disease and pain of the lower and upper extremities, and back disorders were the most common conditions resulting in an EPTS discharge.

TABLE 2.57A TOP 20 PRIMARY EPTS DISCHARGE CONDITIONS FOR ACTIVE DUTY REGULAR RECRUITS IN 2001 – 2005: ARMY

DoDI (6130.3)	Primary EPTS Condition	2001	2002	2003	2004	2005
493	Asthma	565	665	672	644	398
300	Neurotic, mood, somatoform, dissociative, or factitious disorder	464	327	399	369	435
719.4	Disease or chronic pain of lower extremities	230	274	323	307	203
724	Unspecified disorders of back	158	209	259	189	142
905.2	Upper extremity deformities, injury, weakness, insufficient recovery, disease	111	159	176	162	124
718.1	Shoulder instability	57	88	90	55	36
754.6	Pes planus, congenital	101	74	49	61	29
784	Headaches	49	79	58	63	62
345	Convulsive disorders	36	60	52	43	54
717.7	Chondromalacia current, Patellofemoral Pain syndrome, Retropatellar knee pain syndrome current	55	64	59	44	18
401	Hypertension	18	24	69	65	35
717.9	Unspecified internal derangement of knee	33	47	54	42	22
313	Disturbance of emotions specific to childhood and adolescence	68	35	18	28	36
314	ADD/ADHD	28	31	46	36	35
905.4	Lower extremity deformities, injury, weakness, insufficient recovery, disease	66	40	31	26	12
V22	Pregnancy	34	34	16	42	38
732.4	Osteochondritis of the tibial tuberosity	34	38	46	31	11
737	Deviation or curvature of spine current	41	39	38	26	13
746	Congenital anomalies of heart and great vessels	14	40	29	30	16
728.7	Plantar Fasciitis, current	32	23	30	22	9
	All other EPTS discharge categories	902	923	942	865	641
	Total for all EPTS discharge categories	3,096	3,273	3,456	3,150	2,369

Table 2.57B shows the top 20 conditions leading to EPTS discharge in the Army in 2006. The expansion of the codes used to classify several psychiatric and orthopedic conditions resulted in an apparent underrepresentation of such conditions in 2006 relative to previous years in which the DoDI 6130.3 governed the diagnostic coding of medical conditions. However, when the expanded categories are collapsed, the resulting totals appear consistent with the previous classification scheme. While several of the coding revisions posses a one to one correspondence between new and old codes, many of the revisions require additional information that is not readily available to translate between the two versions of the DoDI 6130.

In 2006, the depressive disorders, asthma, and pregnancy were the leading causes of EPTS discharges. The number of EPTS discharges for asthma decreased again in 2006. In 2005, the number of discharges was down to 398 from 644 in CY 2004. In 2006, the number of EPTS discharges for asthma was only 167. Whether this is attributable to changes in accession standards for asthma that took effect in June 2006 is not clear.

TABLE 2.57B TOP 20 PRIMARY EPTS DISCHARGE CONDITIONS FOR ACTIVE DUTY REGULAR RECRUITS IN 2006: ARMY

DoDI (6130.4)	Primary EPTS condition	Count
311	Depressive disorder, not elsewhere classified	167
493	Asthma	116
V22	Pregnancy	54
296.8	Bipolar disorder, other and unspecified	51
345	Convulsive disorders	50
309	Adjustment Disorders	49
719.47	Ankle or Foot pain, deformities or disease	47
724	Unspecified disorders of back	46
719.46	Lower leg pain, deformities, and disease (includes shin splints)	45
296.3	Depression, Major, Recurrent	43
719.41	Shoulder pain, disease, injury current	24
734	Pes Planus, acquired	23
722	Intervertebral disk degeneration, nucleus pulposus herniation, and spondylopathies	22
300.01	Anxiety	20
737	Deviation or curvature of spine current	20
719.45	Pain and deformities of the hip and thigh	18
296.9	Mood disorder other and unspecified	17
346	Headaches Migraines	17
298	Psychosis other and unspecified	16
718.81	Shoulder instability	15
Other	All other EPTS discharge categories	612
Total	Total for all EPTS discharge categories	1,472

Table 2.58A shows the top 20 conditions leading to EPTS discharge in the Navy during 2001 to 2005. Asthma was the leading EPTS condition over the time period examined. Unlike in the Army, EPTS discharges for asthma did not appear to decrease during this time period. Neurotic disorders and personality disorders were the second and third leading causes of EPTS discharges in the Navy, although the numbers of discharges in each category have decreased substantially in more recent years. Diseases and pain of the lower extremities is also a common condition leading to EPTS, however the number of discharges for these disorders fluctuated over time. Such variation might partly reflect a difference in the applicant pool or random variations, but inconsistent reporting of EPTS discharges by MEPCOM makes such determination difficult.

TABLE 2.58A TOP 20 PRIMARY EPTS DISCHARGE CONDITIONS FOR ACTIVE DUTY REGULAR RECRUITS IN 2001 – 2005: NAVY

DoDI (6130.3)	Primary EPTS Condition	2001	2002	2003	2004	2005
493	Asthma	118	147	167	141	154
300	Neurotic, mood, somatoform, dissociative, or factitious disorder	111	213	143	38	73
301	Personality disorders	137	268	89	30	45
719.4	Disease or chronic pain of lower extremities	131	43	78	53	134
313	Disturbance of emotions specific to childhood and adolescence	100	151	63	25	25
724	Unspecified disorders of back	47	28	44	34	42
314	ADD/ADHD	21	66	58	16	23
737	Deviation or curvature of spine current	26	24	31	52	34
V22	Pregnancy	57	37	17	18	24
728	Muscular wasting and disuse atrophy, not elsewhere classified	91	20	15	11	8
905.2	Upper extremity deformities, injury, weakness, insufficient recovery, disease	45	20	15	25	31
784	Headaches	27	28	24	17	29
371.6	Keratoconus of any degree	23	9	27	34	23
389	Hearing deficiency	23	25	21	22	25
345	Convulsive disorders	25	18	21	19	20
754.6	Pes planus, congenital	44	26	24	7	2
717.9	Unspecified internal derangement of knee	32	16	15	15	9
312	Conduct disorders	18	42	15	3	6
401	Hypertension	19	21	16	18	8
780.2	Syncope	20	22	13	9	15
Other	All other EPTS discharge categories	705	591	415	411	501
Total	Total of all EPTS discharge categories	1,820	1,815	1,311	998	1,231

Table 2.58B shows the top 20 conditions leading to EPTS discharge in the Navy in 2006. Asthma was again found to be the leading cause of EPTS discharge, followed by deformities, disease, and pain of the lower leg.

TABLE 2.58B TOP 20 PRIMARY EPTS DISCHARGE CONDITIONS FOR ACTIVE DUTY REGULAR RECRUITS IN 2006: NAVY

DoDI (6130.4)	Condition	Count
493	Asthma	181
719.46	Lower leg pain, deformities, and disease (includes shin splints)	133
724	Unspecified disorders of back	65
301	Personality disorder	48
V22	Pregnancy	33
719.47	Ankle or Foot pain, deformities or disease	31
737	Deviation or curvature of spine current	29
296.3	Depression, Major, Recurrent	24
309.81	Posttraumatic Stress Disorder	24
717.7	Chondromalacia current, Patellofemoral Pain syndrome, Retropatellar knee pain syndrome current	24
786.5	Chest Pain	23
311	Depressive disorder, not elsewhere classified	21
371.6	Keratoconus of any degree	21
718.81	Shoulder instability	21
314	ADD/ADHD	20
346	Headaches Migraines	20
309	Adjustment Disorders	18
389	Hearing deficiency	16
734	Pes Planus, acquired	16
285	Anemia unspecified	15
Other	All other EPTS discharge categories	524
Total	Total for all EPTS discharge categories	1,307

Table 2.59A shows the top 20 conditions leading to EPTS discharge in the Marine Corps during 2001 to 2005. Neurotic disorders and asthma were by far the largest contributors to EPTS discharges in Marines. These conditions were followed by suicide attempt/ideation and personality disorders. Discharges attributable to orthopedic conditions were less common in the Marine Corps relative to the other services.

TABLE 2.59A TOP 20 PRIMARY EPTS DISCHARGE CONDITIONS FOR ACTIVE DUTY REGULAR RECRUITS IN 2001 – 2005: MARINES

DoDI (6130.3)	Primary EPTS Condition	2001	2002	2003	2004	2005
300	Neurotic, mood, somatoform, dissociative, or factitious disorder	131	196	248	272	293
493	Asthma	157	169	172	214	151
300.9	Suicide behavior, gesture or attempt	89	69	47	85	68
301	Personality Disorder	20	32	72	120	91
719.4	Disease or chronic pain of lower extremities	25	24	49	48	55
784	Headaches	20	55	44	43	28
724	Unspecified disorders of back	19	28	47	55	28
314	ADD/ADHD	15	32	43	51	29
905.2	Upper extremity deformities, injury, weakness, insufficient recovery, disease	19	14	32	30	24
313	Disturbance of emotions specific to childhood and adolescence	10	7	39	45	17
389	Hearing deficiency	28	17	26	21	12
995.0	Allergic manifestations	12	21	19	17	27
831	Shoulder Dislocation, unreduced, history or current (joint)	18	18	20	18	13
718.1	Shoulder instability	8	7	24	15	25
345	Convulsive disorders	6	20	24	14	9
401	Hypertension	20	22	6	9	8
315	Academic skills or perceptual defects	2	7	13	19	17
307.6	Enuresis	4	11	16	12	14
786.5	Chest Pain	13	16	10	11	7
305	Nondependent drug abuse	1	3	12	23	16
Other	All other EPTS discharge categories	274	356	404	416	384
Total	Total of all EPTS discharge categories	891	1,124	1,367	1,538	1,316

Table 2.59B shows the top 20 conditions leading to EPTS discharge in the Marine Corps for 2006. Depressive disorders, asthma, personality disorders, and suicidal gestures continued to be the top four reasons for EPTS discharge among Marines.

TABLE 2.59B TOP 20 PRIMARY EPTS DISCHARGE CONDITIONS FOR ACTIVE DUTY REGULAR RECRUITS IN 2006: MARINES

DoDI (6130.4)	Condition	Count
311	Depressive disorders, not elsewhere classified	177
493	Asthma	163
301	Personality disorder	97
300.9	Suicide behavior, gesture or attempt	66
300.01	Anxiety	41
314	ADD/ADHD	39
719.46	Lower leg pain, deformities, and disease (includes shin splints)	37
296.8	Bipolar disorder, other and unspecified	35
989.5	Allergic manifestations	34
296.2	Depression, Major, single episode	28
724	Unspecified disorders of back	25
309	Adjustment Disorders	23
718.81	Shoulder instability	20
296.3	Depression Major Recurrent	19
784.0	Headaches, recurrent	17
786.5	Chest Pain	17
346	Headaches Migraines	16
717.7	Chondromalacia current, Patellofemoral Pain syndrome, Retropatellar knee pain syndrome current	16
550	Hernia, including inguinal	15
780.2	Syncope	13
Other	All other EPTS discharge categories	510
Total	Total for all EPTS discharge categories	1,408

Table 2.60A shows the top 20 conditions leading to EPTS discharge in the Air Force during the period from 2001 to 2005. Asthma was the leading cause of EPTS discharges among Air Force members over the 5-year period examined. Pain and disease of the lower extremities, back disorders, headaches, and pes planus were the second, third, fourth, and fifth leading causes for EPTS discharge in the Air Force. The numbers of EPTS discharges reported in 2001 are unreliable because the Air Force did not provide records for EPTS discharges between 2000 and 2001.

TABLE 2.60A TOP 20 PRIMARY EPTS DISCHARGE CONDITIONS FOR ACTIVE DUTY REGULAR RECRUITS IN 2001 – 2005: AIR FORCE

DoDI (6130.3)	Primary EPTS Condition	2001	2002	2003	2004	2005
493	Asthma	79	271	255	264	168
719.4	Disease or chronic pain of lower extremities	23	64	35	40	69
724	Unspecified disorders of back	17	49	34	36	45
784	Headaches	7	28	28	31	27
754.6	Pes planus, congenital	10	39	25	12	2
905.2	Upper extremity deformities, injury, weakness, insufficient recovery, disease	1	15	18	17	23
717.7	Chondromalacia current, Patellofemoral Pain syndrome, Retropatellar knee pain syndrome current	5	32	4	10	3
905.4	Lower extremity deformities, injury, weakness, insufficient recovery, disease	2	9	11	14	12
345	Convulsive disorders	1	6	10	12	6
717.9	Unspecified internal derangement of knee	1	8	17	7	
685	Pilonidal Cyst, current		2	11	10	9
732.4	Osteochondritis of the tibial tubeosity	5	8	7	8	4
746	Congenital anomalies of heart and great vessels	1	6	11	7	5
550	Hernia, including inguinal	5	6	5	6	3
728.7	Plantar Fasciitis current	6	4	4	2	9
780.2	Syncope	1	7	4	5	7
300	Neurotic, mood, somatoform, dissociative, or factitious disorder	6	4	5	4	4
737	Deviation or curvature of spine current	4	7	4	2	5
427.0	Supraventricular tachycardia	1	2	5	10	3
718.1	Shoulder instability	3	2	5	3	8
Other	All other EPTS discharge categories	79	183	205	180	154
Total	Total of all EPTS discharge categories	257	752	703	680	566

Table 2.60B shows the top 20 conditions leading to EPTS discharge in the Air Force for 2006. The primary causes for EPTS discharge in 2006 were asthma, headaches, back disorders, pes planus, and pain and deformity of the lower leg. While the rank order for these conditions is different from 2006 and previous years, the same conditions comprise the top five EPTS discharge conditions in both time periods. Curiously, acquired pes planus was among the most common EPTS conditions in 2006 while congenital pes planus among the top conditions in 2001-2005. In all years considered, psychiatric conditions comprised only a small part of EPTS discharges and may partly be a result of active screening for these conditions in basic training at Lackland Air Force Base, and in Air Force categorization of such conditions as administrative rather than EPTS discharges.

TABLE 2.60B TOP 20 PRIMARY EPTS DISCHARGE CONDITIONS FOR ACTIVE DUTY REGULAR RECRUITS IN 2006: AIR FORCE

DoDI (6130.4)	Condition	Count
493	Asthma	249
346	Headaches Migraines	88
724	Unspecified disorders of back	65
734	Pes Planus, acquired	60
719.46	Lower leg pain, deformities, and disease (includes shin splints)	58
719.47	Ankle or Foot pain, deformities or disease	17
728.71	Plantar Fasciitis, current	16
754.6	Pes planus, congenital	16
345	Convulsive disorders	14
780.2	Syncope	14
719.43	Forearm pain disease, injury current/wrist pain	12
746	Congenital anomalies of heart and great vessels	12
732.4	Osteochondritis of the tibial tuberosity	11
354	Carpal and cubital syndromes/wrist neuropathies	10
718.81	Shoulder dislocation	10
719.41	Shoulder pain, disease, injury current	10
784.0	Headaches, recurrent	10
592	Nephrocalcinosis	9
717.7	Chondromalacia current, Patellofemoral Pain syndrome, Retropatellar knee pain syndrome current	9
735.0	Hallux Valgus	9
Other	All other EPTS discharge conditions	252
Total	Total of all EPTS discharge conditions	951

Part II: EPTS discharges with an accession record

EPTS discharges among recruits who accessed during 2001-2006 are summarized in Tables 2.61 through 2.67. Note that all references to years refer to the year of accession rather than the year of discharge. Discharge numbers reflect only discharges occurring among individuals with an accession record in the specific year. As mentioned, an EPTS discharge can only be obtained within the first 180 days of service.

Relative risks are used to compare the likelihood of EPTS discharge between demographic groups. The baseline group chosen for each comparison depends on the factor being considered. For factors with some inherent order (e.g., age group, which ranges from younger to older) it is the first or last group in that order, as appropriate. Otherwise, the baseline group is generally the largest group. All comparisons, particularly those by service branch, should be taken in light of EPTS data reporting fluctuations by service and over time (see "Data Sources" for details).

Table 2.61 shows EPTS discharges reported among individuals accessed into enlisted service during each year form 2001 through 2006. With the exception of 2005, the number of reported EPTS discharges did not appear to fluctuate considerably between 2001 and 2006. Furthermore, the percent of accessions receiving an EPTS discharge remained relatively stable over the same time period. The percentage of accession discharged for an EPTS condition was lower in 2001 and 2006. In the most recent year, incomplete follow-up date is the reason for the lower proportion of EPTS discharges while a lack of reporting by the Air Force in 2001 likely explains this observation in 2001.

TABLE 2.61 EPTS DISCHARGES BY ACCESSION YEAR

Year of accession	Accessions	Discharges	% Discharged
2001	162,777	4,670	2.87
2002	174,109	5,941	3.41
2003	168,326	5,787	3.44
2004	140,891	4,957	3.52
2005	129,295	4,335	3.35
2006	157,312	4,530	2.88
Total	932,710	30,220	-

Enlisted accessions between 2001 and 2006 ending in EPTS discharges are shown in Table 2.62 for each branch of service. It shows that the EPTS discharge varies across the services. Marines have the highest discharge rate and the Air Force has the lowest. The differences are significant.

TABLE 2.62 ENLISTED ACCESSIONS IN 2001 – 2006 ENDING IN EPTS DISCHARGE: BY SERVICE

Service	Accessions	Discharged	% Discharged	Relative risk	95% CI
Army	329,665	11,867	3.60	1.00	-
Navy	233,955	7,691	3.29	0.91	0.89, 0.94
Marines	185,413	7,100	3.83	1.06	1.03, 1.09
Air Force[†]	183,677	3,562	1.94	0.54	0.52, 0.56

[†] The Air Force did not provide records for discharges in January – September 2001, so the discharge rate and relative risk for Air Force are underestimated.

Table 2.63 shows the numbers of accessions and subsequent EPTS discharges reported by gender. The risk of EPTS discharge is significantly higher among females relative to males.

TABLE 2.63 ENLISTED ACCESSIONS IN 2001 – 2006 ENDING IN EPTS DISCHARGE: GENDER

Gender	Accessions	Discharged	% Discharged	Relative risk	95% CI
Male	774,257	22,738	2.94	1.00	-
Female	158,445	7,481	4.72	1.61	1.57, 1.65

The number of EPTS discharges and accessions are shown by race for the period of 2001 to 2006 in Table 2.64. The likelihood of EPTS discharge was the highest among whites, and the lowest among others. The difference was significant.

TABLE 2.64 ENLISTED ACCESSIONS IN 2001 – 2006 ENDING IN EPTS DISCHARGE: RACE

Race	Accessions	Discharged	% Discharged	Relative risk	95% CI
White	648,668	22,333	3.44	1.00	-
Black	139,053	4,014	2.89	0.84	0.81, 0.87
Other	86,651	1,993	2.30	0.67	0.64, 0.70
Missing or declined	58,338	1,880	3.22	0.94	0.89, 0.98

Table 2.65 shows the numbers of accessions and EPTS discharges by age for the period of 2001 to 2006. The risk of discharge increases with increasing age group. Furthermore, the likelihood of EPTS discharge for each group is significantly higher relative to the next younger age group. The trend of discharge with age is significant.

TABLE 2.65 ENLISTED ACCESSIONS IN 2001 – 2006 ENDING IN EPTS DISCHARGE: AGE

Age group	Accessions	Discharged	% Discharged	Relative risk	95% CI
17 - 20	666,360	20,985	3.15	1.00	-
21 - 25	214,926	7,197	3.35	1.06	1.04, 1.09
26 - 30	40,289	1,532	3.80	1.21	1.15, 1.27
< 30	11,135	506	4.54	1.44	1.32, 1.57

The number of EPTS discharges and accessions are shown by education level for 2001 to 2006 in Table 2.66. Relative to those with accessions with a high school education at gain, recruits with less than a high school education or who had some level of college education at gain were significantly more likely to receive an EPTS discharge. Those recruits entering onto active duty service with a Bachelor's degree or higher had a significantly lower risk for EPTS discharge relative to recruits with a high school education.

TABLE 2.66 ENLISTED ACCESSIONS IN 2001 – 2006 ENDING IN EPTS DISCHARGE: EDUCATION LEVEL

Education level	Accessions	Discharged	% Discharged	Relative risk	95% CI
Below HS grad[†]	6,734	254	3.77	1.15	1.02, 1.30
HS Diploma	839,411	27,444	3.27	1.00	-
Some college	27,035	993	3.67	1.12	1.06, 1.20
Bachelor's and higher	19,967	413	2.07	0.63	0.57, 0.70
Missing	39,563	1,116	-	-	-

[†] Encompasses the following three cases: 1) one who is pursuing completion of the GED or other test-based high school equivalency diploma, vocational school, or secondary school, etc.; 2) one who is not attending high school and who is neither a high school graduate nor an alternative high school credential holder; 3) one who is attending high school but is not yet a senior.

Table 2.67 shows the enlisted accessions ending in EPTS discharge for the period between 2001 and 2006 by AFQT score. Those scoring in the highest percentile groups (93-99) had the lowest risk of EPTS discharge. Each lower percentile group had a significantly higher risk of EPTS discharge relative to the highest scoring group except for the lowest percentile group (11-29). The risk of EPTS discharge subsequently increases with each decreasing percentile category, with the highest risk of EPTS discharge occurring among those who scored in the 11th to 29th percentiles. There was no significant difference on the EPTS discharges between the two lowest percentile groups.

TABLE 2.67 ENLISTED ACCESSIONS IN 2001 – 2006 ENDING IN EPTS DISCHARGE: AFQT SCORE

AFQT score	Accessions	Discharged	% Discharged	Relative risk	95% CI
93 - 99	50,756	1,163	2.29	1.00	-
65 - 92	333,492	9,609	2.88	1.26	1.18, 1.34
50 - 64	242,322	8,308	3.43	1.50	1.41, 1.59
30 - 49	257,546	9,612	3.73	1.63	1.53, 1.73
11 – 29[†]	40,424	1,518	3.76	1.64	1.52, 1.77
Missing	8,170	10	-	-	-

[†] Individuals scoring in the 10th percentile or lower are prohibited from applying.

Disability Discharges among Army and Air Force Active Duty Enlistees

Data on disability discharge considerations are compiled separately for each service by its disability agency. The Army and Air Force disability agencies have provided data on all disability discharge considerations during 2001-2006. The Navy/Marines agency has provided data only on a diagnosis-specific request basis rather than for all actions. Consequently, only Army and Air Force disability discharge data are summarized.

Part I: Disability discharges without an accession record

Numbers are presented irrespective of accession records; the years shown refer to the year of disability discharge. The individuals being discharged could have been in the service for any number of years. Medical diagnosis categories are taken from the Veterans Administration Schedule for Rating Disability (see the "Disability" section in "Data Sources"). The grouping of VASRD codes has been updated in this Annual Report. The current definitions are provided in Table 2.68. The revisions took into account the use of analogous codes which are unspecified disorders within a general diagnostic category. For example, code 5399 would indicate an unspecified muscle injury (in isolation) or a previously undefined condition (when in combination with a second or third code).

TABLE 2.68 VASRD CODE GROUPINGS

VASRD code range	Conditions encompassed	VASRD code range	Conditions encompassed
5000 - 5099	Prosthetic Implants and diseases of the musculoskeletal system	7300 - 7399	Diseases of the digestive system
5100 - 5199	Amputation or anatomical loss of upper and lower extremities	7500 - 7599	Diseases of the genitourinary system
5200 - 5299	Impairment, limitation, ankylosis of joints, spine, skull, limbs, and extremities	7600 - 7699	Gynecological conditions and disorders of the breast
5300 - 5399	Muscle injuries	7700 - 7799	The hemic and lymphatic systems
6000 - 6099	Diseases of the Eye or loss of vision	7800 - 7899	Diseases of the skin
6200 - 6269	Diseases of the Ear	7900 - 7999	Diseases of the endocrine system
6270 - 6279	Diseases of other sense organs (smell and taste)	8000 - 8099	Organic Diseases of the Central Nervous System
6000 - 6299	Other and unspecified disorders of the sensory organs	8100 - 8199	Miscellaneous neurological disorders
6300 - 6399	Infectious diseases, immune disorders, and nutritional deficiencies	8200 - 8499	Diseases of the cranial nerves
6500 - 6599	Diseases of the nose and throat	8500 - 8799	Diseases of the peripheral nerves
6600 - 6699	Diseases of the trachea and bronchi	8900 - 8999	Convulsive disorders
6700 - 6799	Tuberculosis	9200 - 9299	Schizophrenia and other psychotic disorders
6800 - 6899	Diseases of the respiratory system	9300 - 9399	Organic psychotic disorders
7000 - 7099	Diseases of the heart	9400 - 9599	Affective and nonpsychotic mental disorders
7100 - 7199	Diseases of the arteries and veins	9900 - 9999	Dental and oral conditions
7200 - 7299	Injury to the mouth, lips, tongue, and esophagus		

Table 2.69 shows the leading diagnoses for disability discharge for the Army. Data are shown in aggregate for 2001-2005 and separately for 2006. Collectively, impairments and disease of the spine, skull, limbs, and extremities, as well as other diseases of the musculoskeletal system (including joint replacement) were by far the most common diagnoses cited for disability discharges in both 2006 (58.6%) and the previous five-year period (62.2%). Affective and nonpsychotic mental disorders were the third leading cause of disability discharges in both time periods, accounting for 6.3% in 2001-2005 and 9.3% in 2006. These were followed (in decreasing frequency) by diseases of the trachea and bronchi, 6.1% in 2001-2005 and 5.3% in 2006.

TABLE 2.69 DIAGNOSIS CATEGORIES FOR DISABILITY DISCHARGES FROM ACTIVE DUTY IN 2001 – 2005 VS 2006: ARMY

Diagnosis category	2001 - 2005		2006	
	Count	%	Count	%
Impairment, limitation, ankylosis of joints, spine, skull, limbs, and extremities	13,722	31.1	3,317	31.6
Prosthetic Implants and diseases of the musculoskeletal system	13,696	31.1	2,832	27.0
Affective and nonpsychotic mental disorders†	2,771	6.3	973	9.3
Diseases of the trachea and bronchi	2,690	6.1	557	5.3
Diseases of the peripheral nerves	1,283	2.9	424	4.0
Organic Diseases of the Central Nervous System	1,188	2.7	340	3.2
Muscle injuries	854	1.9	245	2.3
Miscellaneous neurological disorders	811	1.8	166	1.6
Diseases of the endocrine system	922	2.1	164	1.6
Diseases of the digestive system	815	1.8	163	1.6
Diseases of the skin	375	0.9	151	1.4
Amputation or anatomical loss of upper and lower extremities	219	0.5	144	1.4
Schizophrenia and other psychotic disorders‡	611	1.4	127	1.2
Diseases of the heart	561	1.3	122	1.2
Diseases of the Eye or loss of vision	356	0.8	121	1.2
Diseases of the genitourinary system	428	1.0	119	1.1
Diseases of the respiratory system	528	1.2	98	0.9
Convulsive disorders	449	1.0	84	0.8
Diseases of the arteries and veins	336	0.8	64	0.6
Other	1,444	3.3	292	2.8
Total	44,059		10,503	

† Anxiety, dissociative, somatoform, and mood disorders.

‡ Schizophrenia, Delusional disorder, psychotic disorder,Schizoaffective disorder, and Major Affective Disorder.

Table 2.70 shows the leading diagnoses for disability discharge for the Air Force. Disability data from 2001 to 2005 are presented in aggregate while 2006 data is summarized separately. Impairments and disease of the spine, skull, limbs, and extremities accounted for 26.1% of disability discharges in 2006 and 19.0% in the period from 2001 to 2005. Affective and nonpsychotic mental disorders were the second most common discharge condition in 2001-2005 (17.0%) and in 2006 (20.7%). The proportion of disabilities that are accounted for by these two diagnosis categories increased in 2006 relative to 2001-2005. A similar observation was made previously in 2005. Diseases of the trachea and bronchi (11.1%) were the third leading cause of disability discharge in 2001-2005, but these were surpassed in number by discharges for prosthetic implants and diseases of the musculoskeletal system (10.4%) in 2006. These conditions were the fourth leading cause of disability discharges in 2001-2005.

TABLE 2.70 DIAGNOSIS CATEGORIES FOR DISABILITY DISCHARGES FROM ACTIVE DUTY IN 2001 – 2005 VS 2006: AIR FORCE

Diagnosis category	2001-2005		2006	
	Count	%	Count	%
Impairment, limitation, ankylosis of joints, spine, skull, limbs, and extremities	2,437	19.0	657	26.1
Affective and nonpsychotic mental disorders[†]	2,180	17.0	522	20.7
Prosthetic Implants and diseases of the musculoskeletal system	865	6.8	262	10.4
Diseases of the trachea and bronchi	1,423	11.1	199	7.9
Miscellaneous neurological disorders	408	3.2	95	3.8
Diseases of the digestive system	473	3.7	92	3.6
Muscle injuries	208	1.6	89	3.5
Diseases of the peripheral nerves	313	2.4	71	2.8
Schizophrenia and other psychotic disorders[‡]	289	2.3	68	2.7
Organic Diseases of the Central Nervous System[§]	403	3.1	67	2.7
Diseases of the endocrine system	453	3.5	62	2.5
Diseases of the heart	357	2.8	51	2.0
Convulsive disorders	307	2.4	45	1.8
Diseases of the genitourinary system	180	1.4	35	1.4
The hemic and lymphatic systems	165	1.3	34	1.3
Diseases of the respiratory system	225	1.8	27	1.1
Organic psychotic disorders[‡]	147	1.1	23	0.9
Diseases of the cranial nerves	112	0.9	20	0.8
Diseases of the skin	104	0.8	20	0.8
Diseases of the arteries and veins	122	1.0	19	0.8
Other	1,623	12.7	63	2.5
Total	12,794	-	2,521	-

[†] Anxiety, dissociative, somatoform, and mood disorders.

[‡] Schizophrenia, Delusional disorder, psychotic disorder,Schizoaffective disorder, and Major Affective Disorder.

[§] Various dementias.

Part II: Disability discharges with an accession record

Numbers of medical disability discharges within the first year of service among Army and Air Force recruits accessed during 2001 to 2006 are presented. Relative risks are used to compare the likelihood of disability discharge between demographic groups. The baseline group chosen for each comparison depends on the factor being considered. For factors with some inherent order (e.g., age group, which ranges from younger to older) it is the first or last group in that order, as appropriate. Otherwise, the baseline group is generally the largest group. Disability discharge data were unavailable for the Marines and Navy (see the "Disability" section in "Data Sources").

Table 2.71 shows the numbers of disability discharges reported among individuals accessed into the Army or Air Force enlisted service during each year from 2001 to 2006. Results are shown for each year of accession. The percentages of disability discharges within one year of service are increasing over time. In 2001, the percentage of disability discharges was 0.55 and increased to 0.84% in 2005. The percentage of disabilities occurring in the first year of active duty service for accessions in 2006 is underestimated due to incomplete follow-up time.

TABLE 2.71 DISABILITY DISCHARGES FOR ACTIVE DUTY WITHIN 1 YEAR OF SERVICE IN 2001 – 2006: BY YEAR

Year	Total accessed	Discharged within one year of accession	
		Count	%
2001	86,658	478	0.55
2002	102,664	622	0.61
2003	95,592	568	0.59
2004	70,253	486	0.69
2005	64,322	540	0.84
2006	93,853	329	0.35†

† Follow-up for disability discharges among 2006 accessions is incomplete.

Table 2.72 shows the active duty enlisted accessions that ended in a disability discharge by service. Relative to Army enlistees, accessions ending in disability discharge during the first year of service were significantly less likely among Air Force enlistees.

TABLE 2.72 DISABILITY DISCHARGES FOR ACTIVE DUTY WITHIN 1 YEAR OF SERVICE IN 2001 – 2006: BY SERVICE

Service	Total accessions	Discharged within one year of accession			
		Count	%	Relative risk	95% CI
Army	329,665	2,287	0.69	1.00	-
Air Force	183,677	736	0.40	0.58	0.53, 0.63

The demographic characteristics of Army and Air Force accessions ending in disability discharge within one year of service are shown in Tables 2.73 through 2.77. Females were more than twice as likely to be discharged for disabilities as males were. The risk of disability discharge also increased with increasing age. Each younger age group had a significantly lower risk of disability discharge relative to the older age group. On comparison of the risk of disability discharge across race groups, whites clearly have a higher risk of discharge compared to all other racial groups except for those who declined to report race. With respect to the level of education attained by accession, the highest risk of disability discharge was observed for

enlistees who had some level of college education prior to accession, which was significantly greater relative to accessions with a high school education. The lowest risk of disability discharge was for recruits with less than a high school education.

TABLE 2.73 DISABILITY DISCHARGES FOR ACTIVE DUTY WITHIN 1 YEAR OF SERVICE IN 2001 – 2006: BY GENDER

Gender	Total accessions	Discharged within one year of accession			
		Count	%	Relative risk	95% CI
Male	408,909	1,915	0.47	1.00	-
Female	104,426	1,108	1.06	2.27	2.10, 2.44
Missing	7	-	-	-	-

TABLE 2.74 DISABILITY DISCHARGES FOR ACTIVE DUTY WITHIN 1 YEAR OF SERVICE IN 2001 – 2006: BY AGE

Age	Total accessions	Discharged within one year of service			
		Count	%	Relative risk	95% CI
17 - 21	343,158	1,682	0.49	1.00	-
21 - 25	134,915	947	0.70	1.43	1.32, 1.55
26 - 30	27,221	266	0.98	1.99	1.75, 2.27
> 30	8,048	128	1.59	3.24	2.71, 3.88

TABLE 2.75 DISABILITY DISCHARGES FOR ACTIVE DUTY WITHIN 1 YEAR OF SERVICE IN 2001 – 2006: BY RACE

Race	Total accession	Discharged within one year of service			
		Count	%	Relative risk	95% CI
White	353,056	2,180	0.62	1.00	-
Black	77,854	339	0.44	0.71	0.63,0.79
Other	37,451	201	0.54	0.87	0.75,1.00
Declined	44,163	303	0.69	1.11	0.99, 1.25
Missing	818	-	-	-	-

TABLE 2.76 DISABILITY DISCHARGES FOR ACTIVE DUTY WITHIN 1 YEAR OF SERVICE IN 2001 – 2006: BY EDUCATION

Education level	Total accessions	Discharged within one year of service			
		Count	%	Relative risk	95% CI
Below HS graduate[†]	1,166	6	0.51	0.89	0.40,1.97
HS diploma	449,337	2,607	0.58	1.00	-
Some college	15,100	138	0.91	1.58	1.33,1.87
Bachelor's and higher	14,271	98	0.69	1.18	0.97,1.45
Missing	33,468	174	0.52	-	-

[†] Encompasses the following three cases: 1) one who is pursuing completion of the GED or other test-based high school equivalency diploma, vocational school, or secondary school, etc.; 2) one who is not attending high school and who is neither a high school graduate nor an alternative high school credential holder; 3) one who is attending high school but is not yet a senior.

Table 2.77 shows the numbers and likelihood of disability discharge within the first year of service by AFQT percentile score. All the discharge rates were similar to each other and no significant difference was found when comparing the likelihood of disability discharge within one year of service between any two AFQT score categories.

TABLE 2.77 DISABILITY DISCHARGES FOR ACTIVE DUTY WITHIN 1 YEAR OF SERVICE IN 2001 – 2006: BY AFQT SCORE

AFQT score	Total accessions	Discharged within one year of service			
		Count	%	Relative risk	95% CI
93 - 99	29,305	173	0.59	1.00	-
65 - 92	186,466	1,137	0.61	1.03	0.88, 1.21
50 - 64	136,234	788	0.58	0.98	0.83, 1.15
30 - 49	133,683	795	0.59	1.01	0.86, 1.19
11 – 29[†]	22,869	122	0.53	0.90	0.72, 1.14
Missing	4,785	8	-	-	-

[†] Individuals scoring in the 10th percentile or lower are prohibited from applying.

3. DATA SOURCES

AMSARA requests and receives data from various sources, most of which are the primary collection agencies for the data they provide to AMSARA. Because data are seldom collected with the goal of epidemiologic study, AMSARA coordinates with the appropriate points of contact to ensure that the following major data types needed for AMSARA studies are in an appropriate form for epidemiologic work.

As mentioned under "Charter and Supporting Documents," AMSARA maintains strict confidentiality of all data it receives. No external access to the data is allowed, and internal access is limited to a small number of primary analysts on an as-necessary basis. Research results are provided only at the aggregate level, with no possibility of individual identification.

MEPS

AMSARA receives data on all applicants who undergo an accession medical examination at any of the 65 MEPS sites. These data, provided by MEPCOM Headquarters (North Chicago, IL), contain several hundred demographic, medical, and administrative elements on recruit applicants for each applicable branch (regular enlisted, reserve, National Guard) of each service (Air Force, Army, Coast Guard, Marines, and Navy). These data also include records on a relatively small number of officer recruit applicants and other nonapplicants receiving periodic physical examinations.

From the data records provided by MEPCOM, AMSARA extracts personal, medical, and administrative variables that are often of use in studies of military attrition. These include personal identifiers (e.g., name and SSN) for linking with other data, demographics (e.g., gender, age, and race), and a wide range of other information that is often relevant to military attrition studies (e.g., intended service, education level at the time of application, and AFQT scores).

In addition, the MEPS records provide extensive medical examination information, including date of examination, medical qualification status, medical disqualification codes (where relevant), and any waiver requirements. Results of some specific tests are also extracted, including those for hearing/vision, alcohol/drug use, and measurements of height, weight, and blood pressure.

A medical disqualification is categorized as either temporary (condition that can be remediated, e.g., being overweight) or permanent (condition that remains with the applicant, e.g., history of asthma). For those applicants with a permanent disqualification, an accession medical waiver from a service-specific waiver authority is required for the applicant to be eligible for accession into the service (see "Waiver").

MEPS data are the primary source of demographic information on new accessions into the armed forces and of initial medical conditions and medical qualification status. These data are linked by AMSARA to Defense Manpower Data Center (DMDC) gain files (see "Active Duty Enlistee Gain/Loss") to verify new accessions into the military and to provide benchmark descriptive statistics. These linked data are also used in epidemiologic investigations related to

the military's accession medical standards, such as selecting and matching subjects for survival studies to compare retention patterns among new recruits with various medical histories.

Active Duty Enlistee Gain and Loss Files

The Defense Manpower Data Center (DMDC) provides data on individuals entering military service (gain or accession) and on individuals exiting military service (loss). Gain and loss data, which are AMSARA's primary sources of information about who is, or has been, in the military, include when an individual began duty and when or if an individual exited the military. From this information the length of service can be determined for any individual entering and leaving during the periods studied. This information is vital to survival analyses and attrition studies presented in several AMSARA annual reports.

Gain data include approximately 50 variables. Of these, AMSARA has identified 25 of primary interest: personal identifiers (e.g., name and SSN) for linking with other data, demographics (e.g., age, education, and AFQT score) at the time of accession, and service information (e.g., date of entry and IET site). These data are combined with MEPS data to determine accession percentages among applicants by demographic and other variables. Also, as mentioned under "MEPS," these linked data are used in epidemiologic investigations related to the military's accession medical standards.

Loss data also include approximately 50 variables, many of which are the same as those found in the gain file, although they reflect the individual's status at the time of loss rather than at the time of gain. The variables of primary interest to AMSARA are personal identifiers for linking with other data, the loss date for computing length of service, and the interservice separation code as a secondary source of the reason for leaving the military. These data serve as the primary source of information on all-cause attrition from the service and are linked with the MEPS and gain data for studies of attrition.

A problem with the loss data lies in the broad nature of the interservice separation code that characterizes the cause of the loss. Although each service maintains its own codes for describing discharge reasons, these are replaced at DMDC by a consolidated interservice separation code to provide a common coding system for all military discharges. Many categories have overlapping definitions, making it difficult to determine the real reason for discharge. For example, a discharge for EPTS pregnancy might be coded "pregnancy," "condition existing prior to service," or "fraudulent enlistment." This lack of specificity, as well as interservice differences in discharge categorizations, has been encountered in comparing other sources of loss information (i.e., EPTS and disability discharge data) with the DMDC loss data. Moreover, a study of Army discharges at one IET site indicates that the reasons underlying many discharges are more complex than can be fully characterized by any single loss code.

Medical Waiver

AMSARA receives records on all recruits who were considered for an accession medical waiver, i.e., those who received a permanent medical disqualification at the MEPS (see "MEPS") and sought a waiver for that disqualification. Each service is responsible for making waiver decisions about its applicants. Data on these waiver considerations are generated and provided to AMSARA by each service waiver authority. Although the specifics of these data vary by service,

they generally contain identifiers (e.g., name and SSN) for linking with other data, demographics (e.g., gender, age, and race), and information about the waiver consideration.

In particular, each record contains the date of the waiver consideration, indicators of the medical condition(s) for which the waiver was required, and the decision of the waiver authority. The Air Force and Army indicate medical conditions being considered for waiver using the full set of diagnostic codes in ICD-9, whereas the Navy and Marines code waiver conditions according to the subset of ICD-9 codes presented in DoD Instruction 6130.4 in association with medically disqualifying conditions.

Many AMSARA studies begin with the waiver data. Individuals granted waivers for a particular medically disqualifying condition are matched to the DMDC gain file to determine their date of entry, if any, into the service. Those found to have begun active duty within a specified time constitute the pool from which the main study subjects, and often their comparison subjects, are drawn. Follow-up medical and attrition information during military service is appended to these records, and statistical comparisons can then be made. Specific details vary among studies. A few additional details of the data provided by each service waiver authority follow.

It should be noted that there are considerable changes over time in the numbers of waiver considerations and percentages approved for various conditions. While some of these changes are attributable to changed accession standards, others appear more likely to have resulted from changes in coding procedures or other unknown factors. AMSARA will work with the services' waiver authorities to reconcile these findings.

Air Force

The Air Force Directorate of Medical Services and Training (Lackland AFB, TX) transmits, upon request, data on all officer and enlisted accession medical waivers. These data include SSN, name, action (e.g., approved, disapproved, other), and date of waiver consideration. In addition, ICD9 codes are used to define the medically disqualifying condition(s) for which the waiver is being considered.

Army

The Army Recruiting Command (Fort Knox, KY) has provided monthly electronic accession medical waiver data since January 1997. Each data record contains name, SSN, action (e.g., approved, disapproved, other), and date of waiver consideration. In addition, ICD9 codes are used to define the medically disqualifying condition(s) for which the waiver is being considered.

Marines

The Navy Bureau of Medicine and Surgery (BUMED) in Washington, DC, provides, on request, accession and commissioning medical waiver data for enlisted personnel and officers, along with data from special programs such as ROTC and the Naval Academy. Data include name, SSN, date of waiver consideration, and recommended action (e.g., approved, disapproved, other). In addition, the subset of ICD9 codes listed in DoD Instruction 6130.4 is used to indicate the medically disqualifying condition(s) for which the waiver is being considered.

Navy

The Office of Commander, Navy Recruiting Command (Millington, TN) provides accession medical waiver data on applicants for enlisted service in the Navy since May 2000. Data include name, SSN, date of waiver consideration, and recommended action (e.g., approved, disapproved, other). In addition, the subset of ICD9 codes listed in DoD Instruction 6130.4 is used to indicate the medically disqualifying condition(s) for which the waiver is being

considered. Navy data for the year 2006 are not included in this annual report due to problems with data coding and capture.

Hospitalization

The MEDCOM Patient Administration Systems and Biostatistics Activity at Fort Sam Houston, TX has provided hospitalization data on a yearly basis for all services except the Coast Guard. These data contain information on admissions of active duty officers and enlisted personnel to any military hospital. Information on each visit includes SSN for linking with other data, demographics (e.g., gender, age, and race), and details about the hospitalization. In particular, the medical nature of the hospitalization is coded according to the ICD9, with up to eight codes per record to describe all conditions found. Date of admission, date of disposition, number of sick days, number of bed days, and indicators of the medical outcome are also included.

EPTS Discharges

Discharges for EPTS medical conditions are of vital interest to AMSARA. A discharge for a medical condition can be classified as an EPTS discharge if the condition was verified to have existed before the recruit began service and if the complications leading to discharge arose no more than 180 days after the recruit began duty. MEPCOM requests a copy of official paperwork on all EPTS discharges and records certain information about each. This information includes a rough medical categorization (20 categories) of the reason(s) for discharge and a judgment on each discharge regarding why (i.e., concealment, waiver, or unawareness) the person was not rejected for service on the basis of the preexisting condition. Beginning in August 1996, this paperwork has been regularly forwarded by MEPCOM to AMSARA for additional data extraction, including more specific coding of medical conditions leading to discharge.

The primary concern with the EPTS discharge data is completeness. Table 3.1 summarizes the numbers of records provided to AMSARA over 2001-2006. Note that the numbers of records have been unstable over time for nearly all IET sites. For example, the numbers of EPTS records provided by the Marine Corps Training Depot in San Diego dropped considerably in 2001 from 2000 (data not shown), then increased dramatically in 2003 and 2004, and dropped again in 2005 and 2006. Within the Army, EPTS provided by Forts Sill and Knox are considerably lower for 2005 and 2006 than for prior years. The considerable decreasing in EPTS discharge was also found in 2006 in Fort Benning and Fort Leonard. Although some variability in numbers of EPTS records over time is expected, underreporting is clearly a major source of the fluctuations. The counts for some previous years presented in this report may vary from previous Annual Reports because several training sites submitted substantial numbers of records for those previous years while this report was being prepared (see note ***).

TABLE 3.1 EPTS DISCHARGE DATA REPORTED TO MEPCOM BY TRAINING SITE AND YEAR*

Training site	2001	2002	2003	2004	2005	2006	Total
Air Force**							
Lackland AFB	227	784	754	649	590	1,024	4,028
Army							
Fort Jackson	675	822	1,242	1,231	1,002	904	5,876
Fort Leonard Wood	1,487	864	684	741	582	386	4,744
Fort Benning	1,128	1,370	1,242	1,496	1,426	521	7,183
Fort Sill	148	314	697	567	205	244	2,175
Fort Knox	650	582	546	377	224	148	2,527
Marines							
Parris Island	751	1,080	928	1,316	1,323	1,363	6,761
San Diego***	193	152	657	570	169	294	2,035
Navy							
Great Lakes***	1,861	1874	1,350	928	1,205	1,355	8,573
Coast Guard							
Cape May	346	203	166	191	166	228	954
Total	**7,466**	**8,045**	**8,266**	**8,066**	**6,892**	**6,467**	**44,856**

* Numbers may not sum to totals shown in Section 2 because information from specific training sites is incomplete and other requirements for records are different.

** Air Force did not provide EPTS discharge records in April 2000–September 2001

***Navy and Marines EPTS received in 2006 include some discharge records in 2002-2005, which were not received when preparing 2005 or earlier annual reports.

AMSARA has addressed many of these data inconsistencies with on-site officials and continues to emphasize the importance of these data to assessing and improving the fitness of future recruits.

In light of these shortcomings in the data, comparisons of EPTS discharges across services, or even across different training sites within the same service, should be interpreted with caution. Disparities may reflect differences in reporting procedures more than actual differences in discharge likelihood. Furthermore, counts of EPTS records should not be construed as representing all EPTS discharges. Instead, EPTS counts only represent discharges for which data were reported.

Disability Discharges

Data on disability discharge considerations are compiled separately for each service at its disability agency. The Army agency has provided data on all disability discharge considerations during 1995–2006 and continues to provide these data. The Air Force agency has also provided data to cover the 1995–2006. The Navy/Marine agency has provided data only on a diagnosis-specific request basis rather than for all actions. Therefore, only Army and Air Force disability discharge data were summarized in Section 2.

The Army physical disability agency provides information on all disability cases considered, including personal identifiers (e.g., name and SSN), program (e.g., regular enlisted, academy, and officer), date of consideration, and disposition (e.g., permanent disability, temporary disability, or return to duty as fit). For individuals receiving a disability discharge, medical condition codes and degree of disability are also included.

The Air Force Physical Disability Division provides data on all disability cases it considers, including much of the same information as outlined for the Army. Specifically, these data include personal identifiers (e.g., name and SSN), rank, date of consideration, and disposition (e.g., permanent disability, temporary disability, or return to duty as fit). For individuals receiving a disability discharge, medical condition codes and degree of disability are also included.

For both the Army and Air Force data, the medical condition(s) involved in each case are described using the condition codes of the Veterans Administration Schedule for Rating Disabilities. This set is less comprehensive than the ICD9 codes. In some cases the disabling condition has no associated code, so the code most closely resembling the true condition is used. AMSARA therefore only uses broad categories of disability condition codes rather than attempting to interpret specific codes.

Charter and Supporting Documents

HA Control #: NONE
Due Date: NONE

February 28, 1995

ASSISTANT SECRETARY OF DEFENSE
(HEALTH AFFAIRS)
EXECUTIVE SUMMARY/COVER BRIEF

MEMORANDUM FOR THE ASSISTANT SECRETARY OF DEFENSE
(HEALTH AFFAIRS)

THROUGH: Dr. Sue Bailey, DASD (CS)

FROM: Action Officer, Colonel Ed Miller

SUBJECT: Accession Medical Standards Analysis and Research Activity (AMSARA)

PURPOSE:

SIGNATURE--on request that the Assistant Surgeon General of the Army (Research and Development) establish an Accession Medical Standards Analysis and Research Activity (AMSARA).

DISCUSSION:

The Accessions Medical Standards Working Group which met over the summer sponsored through MFIM funding completed a functional economic analysis of the medical accessions examination process. One of the critical recommendations made by the Group was to establish a research activity to provide the Medical Accessions Standards Council (also recommended) with an evidence-based analysis of DoD accessions medical standards. The memorandum tasks the Army with the responsibility of establishing the activity resourced under the Defense Health Program. This has already been staffed with the Assistant Surgeon General of the Army (Research and Development)

RECOMMENDATION:
Sign tasking memorandum to Army Surgeon General.

COORDINATION:
✓ Mr. Conte, PDUSD(P&R)_____
✓ Mr. Maddy, HB&P: See attached memo
✓ Mr. Richards, EO: _____
Dr. Martin, PDASD: _____

CHARTER AND SUPPORTING DOCUMENTS

THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301-1200

HEALTH AFFAIRS

DEC 0 6 1995

MEMORANDUM FOR SURGEON GENERAL OF THE ARMY

SUBJECT: Military Medical Standards Analysis and Evaluation Data Set

The personnel community has asked OASD/HA to develop a fact based accessions policy to minimize medical attrition, quantitate risk in medical waivers, and to defend accession decisions when challenged.

The offices of Clinical Services and Military Personnel Policy have worked closely with epidemiologists at Walter Reed Army Institute of Research on the concept of a Military Medical Standard Analysis and Evaluation Data Set (MMSABDS) to apply quantitative analysis to a longitudinal data base.

The Army Center for Health Promotion and Preventive Medicine (CHPPM) maintains a data base of personnel, hospitalization, deployment and separation information for all Services. I would like WRAIR, in coordination with CHPPM, to serve as consultants to the Accession Medical Standard Steering Committee, modify and maintain the data base, and coordinate field research to answer specific questions germane to accession policy.

Therefore, I request that, by the end of December 1995, a proposal be submitted through you from WRAIR, outlining the consultant role and modifications needed to the data base. This should include funding requirements.

Edward D. Mattox /for
Stephen C. Joseph, M.D., M.P.H.

cc:
Commander WRAIR

DEPARTMENT OF DEFENSE
ACCESSION MEDICAL STANDARDS
STEERING COMMITTEE

CHARTER

I. ESTABLISHMENT, PURPOSE AND SCOPE

A. ESTABLISHMENT

The Under Secretary of Defense (Personnel and Readiness) establishes a Department of Defense Accession Medical Standards Steering Committee (hereafter referred to as the "Committee".) The Committee shall operate under the joint guidance of the Assistant Secretaries of Defense (Force Management Policy and Health Affairs [FMP & HA].)

B. PURPOSE

The Committee's main objective is to ensure the appropriate use of military members with regard to medical/physical characteristics, assuring a cost-efficient force of healthy members in military service capable of completing initial training and maintaining worldwide deployability. The primary purposes of the Committee are: (1) integrating the medical and personnel communities in providing policy guidance and establishing standards for accession medical/physical requirements, and (2) establishing accession medical standards and policy based on evidence-based information provided by analysis and research.

C. SCOPE OF ACTIVITY

1. The Committee's responsibility involves:

a. Providing policy oversight and guidance to the accession medical/physical standards setting process.

b. Directing research and studies necessary to produce evidenced-based accession standards making the best use of resources.

c. Ensuring medical and personnel coordination when formulating accession policy changes.

d. Overseeing the common application of the accession medical standards as outlined in DoD Directive 6130.3, "Physical Standards for Appointment, Enlistment, and Induction."

e. Interfacing with other relevant Department of Defense and Department of Transportation organizations.

f. Recommending promulgation of new DoD directives as well as revisions to existing directives.

g. Recommending legislative proposals concerning accession medical/physical processing.

h. Reviewing, analyzing, formulating and implementing policy concerning the accession physical examination.

i. Issuing policy letters or memoranda providing interpretation of provisions of DoD directives.

j. Resolving conflicts of application of accession medical/physical standards and policies among the Military Services and other authorized agents.

k. Maintaining records and minutes of Committee meetings.

II. ORGANIZATION

A. The Committee will be co-chaired by the Deputy Assistant Secretary of Defense (Military Personnel Policy) and the Deputy Assistant Secretary of Defense (Clinical Services). This will facilitate tasking the Deputy Chiefs of Staff for Personnel and the Surgeons General to assign staffers to relevant working groups, and to ensure DCS/Personnel and Surgeon General personal involvement with the various issues. The Committee will convene semiannually, at a minimum, and at the discretion of the Chairpersons.

B. Committee members are appointed by the Under Secretary of Defense (Personnel and Readiness) and provide ongoing liaison with their respective organizations concerning matters of medical/physical accession policy.

C. The Committee shall be composed of representatives from the following:

Office of the Assistant Secretary of Defense (Force Management Policy)

Office of the Assistant Secretary of Defense (Health Affairs)

Office of the Assistant Secretary of Defense (Reserve Affairs)

Office of Service Surgeons General

Office of Service Deputy Chiefs of Staff for Personnel, and Chief of Personnel and Training, HQ U.S. Coast Guard.

D. Representatives from the Office of the Assistant Secretary of Defense (Force Management Policy) and the Office of the Assistant Secretary of Defense (Health Affairs) shall serve as executive secretaries for the Committee, and maintain a working group, composed of representatives from each of the offices mentioned above, to receive and review issues pertinent to accession policy.

E. The Commander, U.S. Military Entrance Processing Command, and the Director, DoD Medical Examination Review Board shall serve as advisors to the Committee.

F. The Committee may invite consultants (i.e., training, recruiting, epidemiology) at the discretion of the Chairpersons.

Approved: JAN 16 1996
Date

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Acronyms

ADD	attention deficit disorder
ADHD	attention deficit and hyperactivity disorder
AFB	Air Force base
AFQT	Armed Forces Qualification Test
AMSARA	Accession Medical Standards Analysis and Research Activity
AMSWG	Accession Medical Standards Working Group
ARMS	Assessment of Recruit Motivation and Strength
BMI	body mass index
BUMED	Navy Bureau of Medicine and Surgery
CI	confidence interval
CSB	College Scholarship Branch
DMDC	Defense Manpower Data Center
DoD	Department of Defense
DoDI	Department of Defense Instruction
DoDMERB	Department of Defense Medical Examination Review Board
EPTS	existed prior to service
FQ	fully qualified
GED	general educational development
HS	high school
ICD-9	*International Classification of Diseases*, 9th Revision
ISC	Interservice Separation Code
IET	Initial Entry Training
MEDCOM	Medical Command
MEPCOM	Military Entrance Processing Command
MEPS	Military Entrance Processing Station
MTF	Military Medical Treatment Faculty
OBF	over body fat
ROTC	Reserve Officer Training Corps
SSN	social security number
USUHS	Uniformed Services University of the Health Sciences
VASRD	Veterans Administration Schedule for rating Disability
WRAIR	Walter Reed Army Institute of Research